

## **5 CONSULTATION AND COORDINATION**

This chapter summarizes the consultation and coordination with agencies, as well as the public involvement opportunities for the Environmental Impact Statement (EIS), through preparation of the Draft EIS.

### **5.1 CONSULTATION WITH AGENCIES, ORGANIZATIONS, AND TRIBAL GOVERNMENTS**

#### **5.1.1 Agency Coordination**

##### **5.1.1.1 Cooperating Agencies**

The United States (U.S.) Forest Service (Forest Service) is the lead federal agency for this EIS. Two federal agencies, three state agencies, and Valley County are serving as cooperating agencies for this EIS and are listed below. These cooperating agencies are informing the EIS process and providing early input into certain issues addressed in the EIS, based on specific areas of jurisdiction by law and/or special expertise, and participating in development of an EIS that provides a full and fair disclosure of the probable impacts of the Stibnite Gold Project (SGP), and that provides a sound basis for agency permit decisions. The cooperating agencies participated in and informed the alternatives development and evaluation process to determine which alternatives would be carried forward for further analysis in the Draft EIS (see Chapter 2, Alternatives Including the Proposed Action).

- United States Army Corps of Engineers (USACE)
- United States Environmental Protection Agency (EPA)
- Idaho Governor's Office of Energy and Mineral Resources (OEMR)
- Idaho Department of Lands (IDL)
- Idaho Department of Environmental Quality (IDEQ)
- Valley County

Coordination with federal and state agencies was ongoing throughout the preparation of the Draft EIS with regularly scheduled calls and issue-specific meetings.

### **5.1.1.2 Endangered Species Act Section 7 Consultation**

Section 7 of the Endangered Species Act requires all federal agencies, in consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS), ensure that actions funded, authorized, or carried out by federal agencies do not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. The Forest Service has determined that the SGP may have the potential to impact threatened or endangered species protected under the Endangered Species Act, and therefore, the Forest Service requested initiation of consultation with the U.S. Fish and Wildlife Service and National Oceanic Atmospheric Administration Fisheries on June 21, 2018. A Biological Assessment will be prepared to evaluate potential impacts to terrestrial and aquatic endangered or threatened species.

### **5.1.1.3 Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation**

The NMFS is responsible for protecting habitats important to federally managed marine species, which includes anadromous Pacific salmon. Federal agencies must consult with NMFS concerning any action that may adversely affect Essential Fish Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act. EFH includes habitats necessary to a species for spawning, breeding, feeding, or growth to maturity, which includes marine and riverine migratory corridors, spawning grounds, and rearing areas of Pacific salmon species (NMFS 2017). Chinook salmon is the only species that has EFH designated within the SGP area. As defined, EFH includes “all streams, estuaries, marine waters, and other water bodies occupied or historically accessible to Chinook salmon in Washington, Oregon, Idaho, and California.”

### **5.1.2 Tribal Consultation and Government-to-Government Consultation**

Tribal governments have a special and unique legal and political relationship with the U.S. government as reflected in the U.S. Constitution, treaties, statutes, court decisions, executive orders, and memoranda. This relationship imparts a duty on all federal agencies to consult, coordinate, and communicate with American Indian tribes on a government-to-government basis.

The intergovernmental consultation process serves as the primary means for the federal agencies to carry out their trust obligations. Consultation is not a single event, but instead is a process leading to a decision; for example, the Record of Decision for the SGP EIS. Consultation means different things to different tribes. It can be either a formal process of negotiation, cooperation, and policy-level decision-making between tribal governments and the federal government, or a more informal process. Tribal rights and interests are discussed and considered or incorporated into the decision. Consultation can be viewed as an on-going relationship between agencies and tribes, characterized by consensus-seeking approaches to

reach mutual understanding and resolve issues. It may concern issues and actions that could affect the government's trust responsibilities, or other tribal interests.

Consultation minimally serves five purposes:

- To identify and clarify issues;
- To provide for an exchange of existing information and identify where information is needed;
- To identify and serve as a process for conflict resolution;
- To provide an opportunity to discuss and explain the decision; and
- To fulfill the core of the federal trust obligation.

Because Native American tribes can be affected by the policies and actions of the Forest Service in managing the lands and resources under its jurisdiction, the Forest Service has a duty to consult with them on matters affecting their interests. Because of this government-to-government relationship, efforts were made to involve local tribal governments and to solicit their input regarding the proposed action.

The Forest Service sent a letter of notification and inquiry to three tribes, the Nez Perce Tribe, the Shoshone-Bannock Tribes, and the Shoshone-Paiute Tribes, offering the opportunity to participate in formal government-to-government consultation, to participate as a cooperating agency, or to simply receive information about the SGP.

The Forest Service first notified Nez Perce Tribe cultural resource staff about the SGP on March 1, 2017. Formal consultation with the Nez Perce Tribe was requested and initiated on May 23, 2017. The Nez Perce Tribe formalized opposition to the SGP in a resolution passed by the Nez Perce Tribal Executive Committee (the governing body of the tribe) on October 9, 2018 and announced opposition in a press release the same day. Despite formal opposition to the SGP, the tribe continues to participate in a previously established project-specific informal consultation process, including discussion on ways to avoid, reduce, or mitigate impacts.

The Forest Service introduced the SGP to Shoshone-Paiute Tribal leadership during the Wings and Roots Program meeting (government-to-government consultation) on April 13, 2017.

The SGP was formally presented to the Shoshone-Bannock Tribes Fort Hall Business Council and also informally to tribal staff on July 26, 2017.

Updates to each of these tribes are provided on an ongoing basis during project-specific ad-hoc consultation meetings, and the Forest Service will continue to engage in government-to-government consultation following release of the Draft EIS.

As of August 14, 2020, the following meetings had been held with each of the Tribes:

- Nez Perce Tribe – 1 standing regularly scheduled government-to-government meeting and 2 project-specific government-to-government meeting; 4 standing regularly

scheduled staff-to-staff and 28 project-specific staff-to-staff meetings (these standing staff-to-staff meetings are anticipated to continue approximately monthly);

- Shoshone-Paiute Tribes – 4 standing regularly scheduled government-to-government and 15 project-specific government-to-government meetings (these standing government-to-government meetings are anticipated to continue approximately bi-monthly);
- Shoshone-Bannock Tribes – 2 government-to-government and 21 project-specific staff-to-staff meetings (these standing staff-to-staff meetings are anticipated to continue approximately monthly).

The structure of formal government-to-government consultation is between tribal governing bodies (Council or Executive Committee) and Forest Service Line Officers. Staff-to-staff meetings usually include Forest Service technical specialists and tribal liaison and technical specialists.

The Shoshone-Paiute Tribes do not conduct informal consultation; however, they have professionally moderated meetings between the Tribal Business Council Chair and the Forest Service Line Officers, with other members of the Council and/or tribal staff occasionally attending as well.

U.S. Army Corps of Engineers has been represented in one or more project-specific Forest Service consultation meetings with each of these tribes, in an informal capacity, to offer information on the Clean Water Act Section 404 permitting process.

The Nez Perce Tribe, Shoshone-Paiute Tribes, and Shoshone-Bannock Tribes were invited on April 30, 2020, to participate in development of a project-specific Programmatic Agreement (PA) and an associated historic properties treatment plan, which are being prepared to mitigate impacts and address Section 106 of the National Historic Preservation Act (NHPA) compliance (discussed in a sub-section below).

More information on tribal interests can be found in Sections 3.24 and 4.24, Tribal Rights and Interests.

### **5.1.3 National Historic Preservation Act, Section 106**

On behalf of the Forest Service, the third-party contractor (AECOM) completed a synopsis (summary) report in December 2018 to serve as the baseline for archaeological fieldwork and Section 106 consultation among the Forest Service, the Idaho State Historic Preservation Officer (SHPO), and affected tribes, as required by Section 106 of the NHPA. The report summarized and synthesized previous work in the SGP Area of Potential Effect, specifically work performed between 2011 and 2017 by an independent contractor (Lahren Associates) in order to clarify the previous work and to initiate consultation with the Idaho SHPO.

The Forest Service conducted an initial phone conversation with the SHPO during June 2017 to discuss the SGP. Because of the SGP's size, scope, and various alternatives under

consideration, the Forest Service as the lead federal agency has initiated preparation of a PA as a management tool to address project effects on cultural resources and to minimize or resolve any potential adverse effects. A PA outlines measures for compliance with Section 106 of the NHPA, including but not limited to: protocols for the identification and evaluation of historic properties; permitting requirements; treatment of historic properties; monitoring requirements; inadvertent discovery protocols; curation; and treatment of human remains. The PA would identify known adverse effects to historic properties and provide a discussion of proposed mitigation measures that would be implemented. A PA is a legal document with signatories and concurring parties. Agency signatories, invited signatories, and concurring or consulting parties would include the Forest Service, the U.S. Army Corps of Engineers, the Idaho SHPO, the Advisory Council on Historic Preservation, Idaho Power Company, Native American tribes, as well as Midas Gold Idaho, Inc. (Midas Gold). The PA will be fully executed prior to completion of the Record of Decision. More information on the PA process can be found in Sections 3.17 and 4.17, Cultural Resources.

## **5.2 PUBLIC INVOLVEMENT SUMMARY**

### **5.2.1 Public Scoping**

The supervisor of the Payette National Forest (PNF) determined in 2016 that the Forest Service's consideration of Midas Gold's proposed Stibnite Gold Plan of Restoration and Operations (plan of operations) submitted in September 2016 required the preparation of an EIS to ensure Forest Service compliance with the provisions of the National Environmental Policy Act regarding project review and approval decisions, including public involvement. In April 2017, the Forest Service selected an independent environmental consulting firm (contractor) to begin preparation of an EIS, with participation by the Forest Service's Interdisciplinary Team (ID Team), and other participating federal, state, and local agency representatives.

The Council on Environmental Quality defines scoping as “... an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action” (40 Code of Federal Regulations 1501.7). Among other things, the scoping process is used to invite public participation to help identify issues and to obtain public comment at various stages of the EIS process. The Forest Service's public scoping process for the SGP began in mid-2017 with the Forest Service's identification of issues, concerns, and opportunities for the development of the EIS.

The SGP was published in the PNF Schedule of Proposed Actions and on the project website on December 9, 2016. The SGP also was published in the Boise National Forest Schedule of Proposed Actions on July 19, 2017. The project website contains SGP documents and information available to the public, such as the plan of operations submitted in September 2016. The project website is updated with revised SGP milestone dates and other documents for public availability throughout the project life.

The National Environmental Policy Act scoping process formally began when the Forest Service published the Notice of Intent to prepare an EIS in the Federal Register on June 5, 2017. A 45-day public scoping comment period occurred from June 5, 2017, to July 20, 2017. During this time, the PNF solicited public comments on the SGP and held five public meetings: one in Cascade on June 27, 2017, one in McCall on June 28, 2017, two in Boise on June 29, 2017, and one in Yellow Pine on July 15, 2017.

A legal notice was published in The Idaho Statesman, Boise, Idaho (the newspaper of record) and The Star News, McCall, Idaho, on June 1 and June 8, 2017, respectively. A Forest Service press release also was sent to Idaho newspapers, television stations, and radio on May 30, 2017. The Forest Service also placed a notification regarding four of the public scoping meetings on the PNF Facebook page on May 30, 2017. An initial informational scoping packet was distributed to interested and affected parties with 387 mailed hardcopies and 411 emails and also was made available on the Forest Service project website on May 25, 2017. The information packet included a summary of the SGP.

In response to the 2017 public and agency scoping activities, the Forest Service received written comments from: individuals of the general public; members of Congress; tribal governments; federal, state, and local agencies; organized interest groups, or non-governmental organization; and businesses. The Forest Service received a total of 543 submissions during public scoping; 34 of these submissions were form letters, and 509 submissions contained unique content. Approximately 1,837 discrete comments were identified. A systematic process referred to as content analysis was used to organize the contents of the submittals. Detailed records about this process are contained in the Project Record and in the Scoping and Issues Summary Report (AECOM 2018a) and the Scoping and Issues Summary Report Errata (AECOM 2018b), both of which are available to the public on the Forest Service project website.

### **5.3 ONGOING COORDINATION EFFORTS**

Coordination with cooperating and other permitting agencies will continue to occur following the release of the Draft EIS. Agency expertise will remain important for informing the analysis and addressing comments from the public to develop the Final EIS. Consultation with the U.S. Fish and Wildlife Service and NMFS will continue for Endangered Species Act and EFH assessments.

The Forest Service remains available for government-to-government consultation with federally recognized tribes. Government-to-government consultation is an ongoing effort by the Forest Service to share information, answer questions, listen to concerns, and resolve issues.

Consultation and coordination with consulting parties to resolve adverse effects to historic properties in accordance with Section 106 of the NHPA will continue. A PA will be developed through discussions with the consulting parties to ensure that the requirements of Section 106 are satisfied. The Forest Service intends to complete the PA in the same timeframe as the Final EIS and Record of Decision.

A Notice of Availability of this Draft EIS was published in the Federal Register informing stakeholders and other members of the public that the Draft EIS is available for comment for 60 days. It is the intent of the Forest Service to host a virtual public open house during the Draft EIS comment period due to the coronavirus (COVID-19) pandemic. Please refer to the “dear reader” letter at the beginning of this document for more information.

The project website will continue to be updated throughout the EIS process, and the Schedule of Proposed Actions will be updated quarterly throughout the process.

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## 6 LIST OF PREPARERS AND CONTRIBUTORS

### 6.1 LIST OF PREPARERS AND CONTRIBUTORS TO THE ENVIRONMENTAL IMPACT STATEMENT

The Stibnite Gold Project (SGP) Environmental Impact Statement (EIS) was prepared under the supervision of the United States Forest Service (Forest Service). The individuals who contributed to the preparation of this document are listed here by organization, along with their project role, education, and years of experience as appropriate (**Tables 6.1-1** through **6.1-4**).

The following Forest Service personnel were involved in review of the Draft EIS and/or related project documentation (**Table 6.1-1**).

**Table 6.1-1 Forest Service**

<b>Forest Service Reviewer</b>	<b>Title</b>
Linda Jackson (PNF) Keith Lannom (PNF) Tawnya Brummett (BNF) Cecilia Seeholtz, ret. (BNF)	Forest Supervisor
Tawnya Brummett (PNF)	Acting Forest Supervisor
Susan Howle (PNF) Kevin Knesek (PNF)	Deputy Forest Supervisor
Brant Petersen (PNF) Belle Craig (PNF)	Acting Deputy Forest Supervisor
Anthony Botello (PNF)	Krassel District Ranger
Jake Strohmeyer (BNF)	Cascade District Ranger
Patricia Anderson-Soucek (PNF)	Planning Staff Officer
Brian Anderson (PNF)	Acting Krassel District Ranger
Paul Klasner (PNF) Steve Kimball, ret. (PNF)	Natural Resources Staff Officer
Michael Feiger (PNF)	Acting Natural Resources Staff Officer
Sarah Lau (PNF) Jeffery Alexander (BNF)	Recreation, Engineering, Archaeology, Lands and Minerals Staff Officer
Brian Harris (PNF)	Forest Public Affairs Officer
Kathryn Goessel (PNF)	Project Manager
Kellie Brown (PNF)	Administrative Assistant
Sue Dixon (PNF)	Forest Environmental Coordinator

<b>Forest Service Reviewer</b>	<b>Title</b>
Jane Cropp, ret. (PNF) Nell Highfill (BNF)	Forest Recreation Program Manager
Erik Whiteman (PNF) Susie Osgood (BNF)	Forest Archaeologist
Steve Penny (PNF) Steve Kovach (BNF)	GIS Specialist
Susan Miller (PNF) Jennifer Brickey (BNF)	Forest Ecologist
Ann Mebane (R4)	Air Quality Program Manager
June Galloway (PNF) Lisa Nutt (BNF)	Forest Wildlife Biologist
Brian Davis (PNF)	Wildlife Biologist
Todd Leeds (PNF) Dave Kennell, ret. (PNF) Terry Hardy (BNF)	Forest Hydrologist
Leigh Bailey (PNF)	Acting Forest Hydrologist
Kristin Williams (PNF) Alma Hansen, ret. (PNF)	Forest Botanist
Katherine Mohatt (PNF)	Acting Forest Botanist
Joshua Simpson (PNF)	Recreation Program Manager
Brian Harris (PNF)	Public Affairs Officer
Rebecca Havens (PNF)	Lands Program Manager
Megan Heider (PNF)	Timber Program Manager
Jason Wright (PNF)	Forest Transportation Planner
Clayton Nalder (PNF) Herb Roerick (BNF)	Forest Fisheries Biologist
Clint Hughes (PNF)	Minerals and Geology Program Manager
Sandra Dingman (PNF)	Environmental Coordinator
John Dixon (PNF)	Soil Scientist
Tera Little (BNF)	Forest Planner
Lisa Thompson (PNF)	Administrative Assistant
Delilah Jaworski (R3)	Regional Social Scientist
Todd Touchard (R4)	Geotechnical Engineer
Nancy Brunswick (R4)	Regional Landscape Architect
Natalie Little (R4)	Regional Sustainable Operations & Climate Change Coordinator
Kathy Zamba (R4)	Environmental Engineer
Lee Jacobson (R4)	TES Species Program Manager
Thomas Enroth (R4)	Regional Hazmat Coordinator

<b>Forest Service Reviewer</b>	<b>Title</b>
Heidie Torrealday (R4)	Regional Geologist
Pete Gomben (R4)	Administrative Review and Litigation Coordinator
Edward Gazzetti (WO) Joseph Gurrieri (WO)	Minerals and Geology Management - Hydrogeologist
Chris Miller (WO)	Economist
Jacob Deal (WO)	GHG ORISE Fellow
Stephani Rust (R2) Sitka Pence (WO) Dan Giannamore (R9)	NEPA Planner
Kris Stein (R6)	Hells Canyon NRA/Eagle Cap District Ranger
Kim Smolt (R1)	NEPA, Administrative Review and Litigation Specialist
Jennifer Purvine (WO)	Planning Biologist

## Table Notes:

BNF = Boise National Forest; GHG = Greenhouse Gas Emissions NEPA = National Environmental Policy Act; NRA = National Recreation Area; ORISE = Oak Ridge Institute for Science and Education; PNF = Payette National Forest; R1 = Northern Regional Office; R2 = Rocky Mountain Regional Office; R4 = Intermountain Regional Office; R6 = Pacific Northwest Regional Office; ret = retired; TES = Threatened, Endangered, and Sensitive; WO = Washington DC Office

**Table 6.1-2 Cooperating Agencies**

<b>Agency</b>	<b>Point of Contact</b>
United States Army Corp of Engineers Walla Walla District Boise Regulatory Office 720 Park Boulevard, Suite 245 Boise, Idaho 83712	Christen Marve Griffith, Regulatory Project Manager
United States Environmental Protection Agency, Region 10 Policy and Environmental Review Branch U.S. EPA Region 10, Alaska Operations Office 222 West 7th Avenue, #19 Anchorage, AK 99513-7588	Molly Vaughan, NEPA, Mining Review
Idaho Department of Environmental Quality 1445 North Orchard Street Boise, Idaho 83706	Aaron Scheff, Boise Regional Office Administrator
Idaho Department of Lands Payette Lakes Area Office 555 Deinhard Lane McCall, Idaho 83638	Diane Green, Regulatory/Reclamation
Governor's Office of Energy and Mineral Resources 304 North 8th Street, Suite 250 Boise, Idaho 83702	Marde Mesinger, Minerals Policy Analyst
Valley County Valley County Commission P.O. Box 1350 Cascade, Idaho 83611	Dave Bingaman, Commissioner

**Table 6.1-3 Third Party EIS Preparers - AECOM**

<b>Contributor</b>	<b>Project Role</b>	<b>Qualifications</b>	<b>Years of Experience</b>
Jennifer Frownfelter	Principal-In-Charge	B.S. Environmental Biology M.S. Public Policy M.S. Environmental Management	22
Valerie Porter	Project Manager, NEPA Technical Lead, Fish Resources and Fish Habitat	B.S. Biology MBA Business Administration	25
Anne Baldrige	Project Manager, Technical Lead, Alternatives Development	B.S. Geology MBA Finance and Accounting	41
Kathalyn Tung	Deputy Project Manager, NEPA Coordinator, Access and Transportation	B.S. Environmental Sciences M.A. Planning AICP	14
Bill Killam	Senior Advisor: NEPA, Cumulative, Water Rights, Cultural Resources	B.A. Anthropology, Sociology, and Psychology	46
Nathan Counts	Technical Editor Lead, Soils and Reclamation Cover Materials	B.A. History M.S. Environmental Studies	14
Robin Lium	GIS Team Lead	B.A. Biology M.S. Wildlife Conservation and Habitat Management GISP	11
Courtney Brozovsky	GIS Team Lead	B.S. Environmental Science GISP	10
Paul Dworlan	Physical Discipline Lead – Geologic Resources and Geotechnical Hazards, Air Quality, Climate Change, Soils and Reclamation Cover Materials, Hazardous Materials, Noise	B.S. Geology M.S. Geology MBA Business Administration PG	34
Matt Spansky	Physical Discipline Lead - Surface Water and Groundwater Quantity (including Water Rights), Surface Water and Groundwater Quality (including Geochemistry)	B.S. Geology PG	19
Richard Greer	Biological Discipline Lead - Vegetation (Non-native Plants, Botanical Resources), Wetlands and Riparian Resources, Fish Resources and Fish Habitat, Wildlife, Timber Resources	B.A. Zoology M.S. Wildlife Ph.D. Zoology	34
Jennifer Bell	Social Discipline Lead – Land Use and Land Management, Access and Transportation, Cultural Resources, Public Health and Safety, Recreation, Scenic Resources, Social and Economic Conditions, Environmental Justice, Special Designations (Wilderness; Wild and Scenic Rivers; Inventoried Roadless Areas; Research Natural Areas), Tribal Rights and Interests	B.S. Environmental Studies Master of Urban and Regional Planning	13

## 6 LIST OF PREPARERS

<b>Contributor</b>	<b>Project Role</b>	<b>Qualifications</b>	<b>Years of Experience</b>
Paul Burge	Noise	B.S. Mechanical Engineering M.S. Mechanical Engineering	32
Nik Carlson	Social and Economic Conditions, and Environmental Justice	M.S. Economics	28
Sue Coughenour	Word Processing, 508 Compliance	2 Years General Studies	34
Bill Craig	Senior NEPA Advisor	B.S. Environmental Design/Architecture	30
Robert Dover	Senior NEPA Advisor, Surface Water and Groundwater Quality	B.S. Geology M.S. Geology PG	34
Anne Ferguson	Recreation	B.S. Natural Resources Conservation M.S. Environmental Design/Architecture	18
Susan Garland	Wild and Scenic Rivers, Scenic Resources	B.A. English Literature M.S. Environmental Science	16
Paul Hamidi	Soils and Reclamation Cover Materials	B.S. Forestry M.S. Forestry Certified Professional Soil Scientist	29
Linda Harriss	Word Processing, 508 Compliance	A.S. Communications Studies/Speech Communication and Rhetoric	25
Noah Herlocker	Wetlands and Riparian Resources	B.S. Ecology/Botany Certified Professional Wetland Scientist Certified Wetland Credit Verifier	19
Linda Howard	Noise	B.S. Biology	17
Mike Kelly	Cultural Resources, Archaeologist	B.A. Anthropology M.A. Anthropology Professional Archaeologist	41
Jenifer King	Social and Economic Conditions, Environmental Justice	B.S. Biology	25
Louise Kling	Scenic Resources, Special Designations (Wilderness; Wild and Scenic Rivers; Inventoried Roadless Areas; Research Natural Areas)	B.S. Ecology M.S. Fisheries (pending thesis) M.S. Landscape Ecology (pending thesis defense)	26
Roy Leidy	Fish Resources and Fish Habitat	B.S. Forestry and Resource Management	50
Juan Levesque	Fish Resources and Fish Habitat Independent Technical Review	B.A. Biology M.S. Marine Biology Ph.D. Environmental Science Fisheries Professional	25
Sarah McDaniel	Cultural Resources, Tribal Rights and Interests, Archaeologist	B.A. International Studies M.A. Anthropology Professional Archaeologist	20

## 6 LIST OF PREPARERS

<b>Contributor</b>	<b>Project Role</b>	<b>Qualifications</b>	<b>Years of Experience</b>
Alexa Molthen	Project Assistant, Project Record, Climate Change, Land Use and Land Management	B.S. Conservation and Environmental Science	10
Emily Newell	Scenic Resources	B.S. Civil Engineering EIT Michigan	15
Allison Payne	Hazardous Materials, Public Health & Safety	B.S. Geology and Environmental Science M.S. Geology	14
Galen Peracca	Timber Resources	B.S. Environmental Management M.S. Forestry	18
Jan Reed	Vegetation (Non-native Plants, Botanical Resources), Wetlands and Riparian Resources, Fish Resources and Fish Habitat	B.S. Environmental Studies M.S. Ecology	15
Laura Scheffler	Public Health & Safety	B.S. Chemistry M.S. Environmental Health	24
Mary Seidell	GIS Specialist	B.S. General Studies M.S. Data Processing	5
Maria Shephard	Fish Resources and Fish Habitat, Wildlife, Vegetation (Non-native Plants, Botanical Resources), Wetlands and Riparian Resources, Timber Resources	B.A. Zoology	34
MacNamara Shoulders	Geologic Resources and Geotechnical Hazards, Fish Resources and Fish Habitat	B.S. Biology	36
Cara Wright	Geologic Resources and Geotechnical Hazards	B.A. Geology M.S. Geology	32

**Table 6.1-4 Third Party EIS Preparers - Subcontractors**

<b>Contributor</b>	<b>Project Role</b>	<b>Qualifications</b>	<b>Years of Experience</b>
Mike Cox ERM	Principal	B.S. Geological Engineering Graduate Studies Arctic Engineering Alaska Registered PE Idaho Registered PE Montana Registered PE Washington Registered PE Wyoming Registered PE North Dakota Registered PE	22
Ryan Lisson ERM	Project Manager, Wildlife and Wildlife Habitat	B.S. Biology	9
Robert Farmer ERM	Climate Change, Air Quality, Green House Gas	B.S. Chemical Engineering M.S. Chemical Engineering Ph.D. Chemical Engineering	26
Coby Hall ERM	Surface Water	B.S. Geoscience (Hydrology)	8
Piotr Rzepecki ERM	Groundwater	M.S. Geology and Geography Ph.D. Geology	30
Derek Risso Ecosystem Sciences	Fish Resources and Fish Habitat, Stream Restoration, Fisheries, Water Rights and Resources	B.A. Environmental Studies M.S. Fisheries and Wildlife Science	22
Zach Herzfeld Ecosystem Sciences	Fish Resources and Fish Habitat	B.A. International Business/Spanish M.S. Geography	10
Tim Maguire Ecosystem Sciences	Fish Resources and Fish Habitat	B.A. Environmental Studies M.S. Geography	23
Leslie Watson Watson Environmental	Mining/Forest Service NEPA, Alternatives Development, Wilderness, Inventoried Roadless Areas, Research Natural Areas	B.S. Zoology	30



## **6.2 LIST OF DOCUMENT RECIPIENTS AND THOSE NOTIFIED**

### ***Federal Agencies***

- Acquisition and Serials Branch
- Forest Service, Boise National Forest
- Forest Service, Cascade Ranger District
- Forest Service, Intermountain Regional Office
- Forest Service, Payette National Forest
- Forest Service, Salmon-Challis National Forest
- National Oceanic Atmospheric Administration, National Marine Fisheries Service
- Office of Environmental Policy and Compliance
- United States Army Corps of Engineers
- United States Bureau of Reclamation
- United States Department of Justice
- United States Environmental Protection Agency
- United States Fish and Wildlife Services

### ***State Agencies***

- Idaho Congressional Representatives
- Idaho Department of Commerce
- Idaho Department of Environmental Quality
- Idaho Department of Fish and Game
- Idaho Department of Labor
- Idaho Department of Lands
- Idaho Department of Water Resources
- Idaho Governor's Office of Energy and Mineral Resources (OEMR)
- Idaho House of Representatives
- Idaho State Historic Preservation Office
- Idaho State Historical Society
- Idaho State Senate
- Office of Governor Brad Little

### ***Tribes***

- Nez Perce Tribe
- Shoshone-Bannock Tribes
- Shoshone-Paiute Tribes

### ***Local Government***

- Ada County Commissioners
- Adams County Commissioners
- Boise County Commissioners
- Cascade Chamber of Commerce
- Cascade School District #422
- City of Cascade
- City of Donnelly
- City of McCall
- Valley County Board of County Commissioners

### ***Organizations and Businesses***

- 8<sup>th</sup> Street Marketplace
- Academy Mortgage
- Advocates for the West
- Alliance for the Wild Rockies
- American Exploration & Mining Association
- Ameriben
- Amerigas Propane
- Backcountry Recreation Club
- Blue Ribbon Coalition
- Bob Bate Ford
- Boise Valley Fly Fisherman
- Cascade Medical Center
- Center for Biological Diversity
- Columbia River Inter-Tribal Fish Commission
- Deadwood Outfitters
- Donnelly Rural Fire Protection District
- Elk Springs Outfitters
- Fly Fishers of Idaho
- Formation Capital Team
- Golden Eagle Audubon
- Golden Predator
- Granite Excavation, Inc.
- Greater Garden Valley Areas Chamber of Commerce
- Hecla Mining Company
- Idaho Association of Commerce & Industry
- Idaho ATV Association
- Idaho Chapter, United Women Entrepreneurs
- Idaho Conservation League
- Idaho First Bank
- Idaho Junior Steelheads
- Idaho Mining Association
- Idaho Outfitters and Guides
- Idaho Power Company
- Idaho Recreation Council

- Idaho Rivers United
- Idaho State Bowhunters
- Idaho Whitewater Association
- Idaho Wildlife Federation
- IDAK Consulting Inc.
- Intermountain Forest Association
- Ivy Minerals, Inc.
- Jerry's Auto Parts
- JJO LLC
- J.R. Simplot Company
- Juniper Mountain Outfitters
- Kniefel Insurance
- Leavitt & Associates Engineers Inc.
- May Security
- McCall Area Snowmobile Club
- Midas Gold Idaho, Inc.
- Mile High Power Sports
- Mining Minnesota
- Mink Geohydro Inc.
- Monsanto
- Norell Ranch
- Northwest Whitewater
- Outsider Club
- Pistol Creek Outfitters
- Press in the Pines
- Rocky Mountain Elk Foundation
- Rocky Mountain Signs
- ROSE Advocates
- Sierra Club – Idaho Chapter
- Sulphur Creek Ranch Outfitters
- Teck America Incorporated
- The Cascade Store Employees and Owners
- The Lilypad, LLC
- The McCall Candy Company LLC
- The McCall Store LLC
- The Nature Conservancy
- The Wilderness Society
- Treasure Valley Backcountry Horsemen
- Treasure Valley Trail Machine Association
- Trout Unlimited
- Valley Soil & Water Conservation District
- Wapiti Meadows Ranch
- Warm Lake Users Association
- West Mountain Snowmobile Club
- Western Lands Project
- Western State Equipment Company
- Winter Wildlands Alliance
- Women's Mining Coalition
- Yellow Pine Fire Protection District
- Yellow Pine General Store
- Zena Creek Ranch

### ***Individuals***

Notifications of the availability of the Draft EIS also were sent to over 1,900 individuals.

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## 7 ACRONYMS AND GLOSSARY

### 7.1 ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µg/L	micrograms per liter
µg/m <sup>3</sup>	micrograms per cubic meter
ΔE	color contrast
AA	assessment area
AAC	acceptable ambient concentration
AADT	annual average daily traffic
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ACNWTC	Arthur Carhart National Wilderness Training Center
AECOM	AECOM Technical Services, Inc.
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AFA	Adkin's Flat Addition
amsl	above mean sea level
ANFO	ammonium nitrate and fuel oil
AOC	Administrative Order by Consent
AoD	areas of previous disturbance
APE	Area of Potential Effects
API	American Petroleum Institute
APLIC	Avian Power Line Interaction Committee
AQRV	Air Quality Related Value
AQS	Air Quality Standards
ARD	acid rock drainage
ARPA	Archaeological Resources Protection Act
ASQ	Allowable Sale Quantity
AST	aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
ATV	All-terrain vehicle
B.P.	years before present
BA	biological assessment
BACT	best available control technology
BC RAMP	Big Creek Restoration Access Management Plan
BCI	biotic condition index

BCR	Backcountry Restoration
BCY	bank cubic yards
BGMU	Big Game Management Units
bgs	below ground surface
BiOp	Big Creek Diversion Biological Opinion
BLM	U.S. Bureau of Land Management
BMC	Bradley Mining Company
BMI	body mass index
BMP	Best Management Practice
BNF	Boise National Forest
Boise Forest Plan	Boise National Forest Land and Resource Management Plan
BOR	U.S. Bureau of Reclamation
BT	bull trout
C	contrast
Ca	calcium
CAA	Clean Air Act
CaCO <sub>3</sub>	calcium carbonate
CASTNET	Clean Air Status and Trends Network
CCC	continuous concentration
CCD	Census County Subdivision
CE	categorical exclusion
CEAA	cumulative effects analysis area
Census	U.S. Census Bureau
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CF	cubic feet
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH	Chinook Salmon
CH <sub>4</sub>	methane
CISZ	Central Idaho Seismic Zone
CIWA	Central Idaho Wilderness Act
CL	cultural landscape
Cl-	chloride
cm	centimeter
CMAQ	Community Air Quality
CMP	Conceptual Mitigation Plan
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> eq	carbon dioxide equivalent
COC	constituent of concern

COI	constituents of interest
COLD	cold water communities
CPNWH	Consortium for Pacific Northwest Herbaria
CPT	Cone Penetrometer Test
CR	County Road
CRMO	Craters of the Moon National Monument
CRPA	Cave Resources Protection Act
CS	Covered and Stable
CTB	Centennial Tectonic Belt
CTM	Chemical Transport Model
CWA	Clean Water Act
DA	Department of the Army
DAT	dominance and taxa
dB	decibels
dBA	decibels on the A-weighted scale
dbh	diameter at breast height
DCMI	future domestic, commercial, municipal, and industrial
DCPT	Dynamic Cone Penetrometer Test
DD	detrimental soil disturbance
DEM	digital elevation model
DEQ	Department of Environmental Quality
District	Stibnite Historic District
dm	decimeter
DMEA	Defense Minerals Exploration Administration
DOC	dissolved organic carbon
DOI	Department of the Interior
DPS	distinct population segment
DRI	Desert Research Institute
DRMP	Development Rock Management Plan
DRSF	Development Rock Storage Facility
DSHA	deterministic seismic hazard analysis
DWS	drinking/domestic water supply
EA	Environmental Assessment
ECA	Environmental Case Assessment
eDNA	environmental DNA
EDRR	Early Detection and Rapid Response
EFH	essential fish habitat
EFMC	East Fork Meadow Creek
EFSF RAMP	East Fork South Fork Restoration Access Management Plan
EFSFSR	East Fork South Fork Salmon River
EIS	Environmental Impact Statement
ELF	extremely low frequency
ELCR	excess lifetime cancer risk
EMF	electromagnetic field

EMMP	Environmental Monitoring and Management Plan
EO	Executive Order
EOY	end of mine year
EPA	U.S. Environmental Protection Agency
ERM	Environmental Resources Management
ESA	Endangered Species Act
ESS	Ecosystem Sciences, LLC
ESU	evolutionary significant unit
FA	functioning appropriately
FAA	Federal Aviation Administration
FCRNRW	Frank Church River of No Return Wilderness
feet/day	feet per day
feet <sup>2</sup> /day	square feet per day
FEM	Federal Equivalent Method
FEMA	Federal Emergency management Agency
FFZ	Fern Fault Zone
FHWA	Federal Highway Administration
FI	Functional Index
FL	fork length
FLAG	Federal Land Managers' AQRV Work Group
FMCSA	Federal Motor Carrier Safety Administration
FMEA	Failure Mode Effects Analysis
FMP	Fisheries and Aquatic Resources Mitigation Plan
fOD	frigid oxyaquic dystrocryepts
Forest Service	U.S. Forest Service
FOS	factor of safety
FPSA	Forest Plan Special Areas
FR	Functioning at Risk
FR	National Forest System Road
FRM	Federal Reference Method
FRTA	Forest Roads and Trails Act
FSDMP	Forest Soil Disturbance Monitoring Protocol
FSH	Forest Service Handbook
FSM	Forest Service Manual
FT	Forest Trail
FTA	Federal Transit Administration
fTH	frigid typic haplosaprists
FUR	Functioning at Unacceptable Risk
FWCA	Fish and Wildlife Coordination Act
FY	fiscal year
g/ha-yr	grams per hectare-year
g/km <sup>2</sup> -yr	grams per square kilometer per year
GAQM	Guideline on Air Quality Models
GCFZ	Garnet Creek Fault Zone



GCL	geosynthetic clay liner
GDA	Ground Disturbing Activity
GDE	groundwater-dependent ecosystem
GFRG	General Forest, Range and Grassland
GHG	greenhouse gas
GIS	Geographic Information System
GM	growth material
GMS	growth media stockpile
GMU	game management unit
GOSPEL	Gospel Hump
gpd	gallons per day
gpm	gallons per minute
GPS	global positioning system
GRAHM	Global/Regional Atmospheric Heavy Metals model
H:V	horizontal to vertical
H+	free acidity
H <sub>2</sub> SO <sub>4</sub>	sulfuric acid mist
HAP	Hazardous Air Pollutant
HCN	hydrogen cyanide
HCT	humidity cell test
HDPE	high-density polyethylene
HDR	HDR, Inc.
HECA	Hells Canyon Wilderness
Hecla	Hecla Mining Company
HEMBLD	Hemingway-Boulders
HFC	hydrofluorocarbon
Hg	mercury
Hg <sub>2</sub>	gaseous mercury
HGM	hydrogeomorphic
HgP	particulate-borne mercury
HNO <sub>3</sub>	nitric acid
HRV	historical range and variability
HUC	Hydrologic Unit Code
HV	Heavy Vehicle
HWMA	Hazardous Waste Management Act
IBCP	Idaho Bird Conservation Plan
ICCNAC	Idaho Centennial Commission Native Americans Committee
ICMC	International Cyanide Management Code
ICMM	International Council on Mining and Metals
ICT	Idaho Centennial Trail
ICTRT	Interior Columbia Technical Recovery Team
ID	Idaho
IDAPA	Idaho Administrative Procedures Act
IDEOC	Idaho Emergency Operations Center

IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDH&HS	Idaho Department of Health and Human Services
IDHW	Idaho Department of Health and Welfare
IDL	Idaho Department of Lands
IDPR	Idaho Department of Parks and Recreation
IDWR	Idaho Department of Water Resources
IFPA	Idaho Forest Practices Act
IFWIS	Idaho Fish and Wildlife Information System
IMPLAN	A company that specializes in economic impact data and analytical software
IMPROVE	Interagency Monitoring of Protected Visual Environments
INAP	International Network for Acid Prevention
INHP	Idaho Natural Heritage Program
IOEM	Idaho Office of Emergency Management
IOGLB	Idaho Outfitters and Guides Licensing Board
IP	Intrinsic Potential
IPCC	Intergovernmental Panel on Climate Change
IPCo	Idaho Power Company
IPDES	Idaho Pollutant Discharge Elimination System
IRA	inventoried roadless area
ISDA	Idaho State Department of Agriculture
ITD	Idaho Transportation Department
IWG	Interagency Working Group
K	potassium
kg	kilogram
kg/ha-yr	kilograms per hectare per year
km	kilometer
KMYL	McCall Municipal Airport
KOP	key observation point
kV	kilovolt
Lahren	Lahren Associates
LAU	Lynx Analysis Unit
LCAS	Lynx Conservation Assessment and Strategy
L <sub>DN</sub>	day-night noise level
LEDPA	least environmentally damaging practicable alternative
L <sub>EQ</sub>	Equivalent sound level
L <sub>EQ1h</sub>	Average hourly noise level
L <sub>EQ24h</sub>	Average noise level over a 24-hour period
LIDAR	Light Detection and Ranging
LLC	limited liability corporation
LLDPE	linear low-density polyethylene
L <sub>MAX</sub>	A-weighted maximum sound level
LMF	Landmark Maintenance Facility

LOEC	lowest observed effects concentration
LOM	Life-of-Mine
LPW	local population watershed
LRMP	Land and Resource Management Plan
LSP	landslide prone
LV	light vehicle
LWD	large woody debris
m	meter
M	modification
m/sec	meters per second
m <sup>2</sup>	square meters
m <sup>3</sup>	cubic meter
MA	Management Area
Ma	million years ago
MACT	maximum achievable control
MBF	thousand board feet
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
MCFZ	Meadow Creek Fault Zone
MCL	maximum contaminant level
MDL	method detection limit
MDN	mercury deposition network
MeHg	methylmercury
MFZ	Mule Fault Zone
mg	milligram
mg/kg	milligrams per kilograms
mg/L	milligrams per liter
Midas Gold	Midas Gold Idaho, Inc.
MIGO	Mining Goals
MIS	Management Indicator Species
MM	maximum modification
mm	millimeter
MMIF	Mesoscale Model Interface
MMIFStat	Mesoscale Model Interface statistics program
MMT	million metric ton
Mobil	Mobil Oil Corporation
MPC	management prescription category
MPG	major population group
mph	miles per hour
MRR	Mandatory Reporting of Greenhouse Gas Rule
MSDS	Material Safety and Data Sheets
MSHA	Mine Safety and Health Administration
MT	metric ton
mTC	mixed typic cryorthents

MVUM	motor vehicle use map
MW	megawatt
MWAM	Montana Wetland Assessment Method
MWh	megawatt hour
MWH	MWH Americas, Inc.
MYL	McCall Municipal Airport
N	Nitrogen
N/A or NA	not available/applicable
N <sub>2</sub> O	nitrous oxide
Na	sodium
NAAQS	National Ambient Air Quality Standards
NADP	National Atmospheric Deposition Program
NAG	Non-acid generating
NAGPRA	Native American Graves Protection and Repatriation Act
NC	no comparison made
ND	non-detect
NDSP	National Dam Safety Program
Neg.	Negligible
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFMA	National Forest Management Act of 1976
NFS	National Forest System
NFST	National Forest System Trail
ng/L	nanograms per liter
NH <sub>4</sub>	ammonium
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NIDGS	Northern Idaho ground squirrel
NIEHS	National Institute of Environmental Health Sciences
NM	National Monument
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO <sub>2</sub>	nitrogen dioxide
NO <sub>3</sub>	nitrate
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPR	neutralizing potential ratio
NPS	National Park Service
NPT	Nez Perce Tribe
NPTL	Nez Perce Tribal Land

NRC	National Research Council
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NRM	Natural Resource Manager
NSPS	New Source Performance Standards
NSR	Noise Sensitive Receiver
NTN	National Trends Network
NTU	Nephelometric Turbidity Unit
NVUM	National Visitor Use Monitoring
NWI	National Wetlands Inventory
NWPS	National Wilderness Preservation System
NWS	National Weather Service
O&M	operations and management
O <sub>3</sub>	ozone
OHV	off-highway vehicle
OHWM	ordinary high-water mark
OLM	Ozone Limiting Method
OM	occupancy model
OMB	U.S. Office of Management and Budget
ORV	Outstandingly Remarkable Value
OSHA	Occupational Safety and Health Administration
OSV	over-snow vehicle
OW	open water
P	primitive
P.L.	Public Law
PA	Programmatic Agreement
PAB	palustrine aquatic bed
PAG	potentially acid generating
Payette Forest Plan	Payette National Forest Land and Resource Management Plan (Forest Service 2003)
Pb	lead
PBF	physical and biological feature
PCE	Primary Constituent Element
PCR	primary contact recreation
PEM	palustrine emergent marsh
PFC	perfluorocarbon
PFO	palustrine forested
PFS	Preliminary Feasibility Study
PGA	peak ground acceleration
PGM	photochemical grid modeling
PHABSIM	Physical Habitat Simulation System
PIBO	PACFISH/INFISH Biological Assessment
PIF	Partners in Flight
PILT	payment in lieu of taxes

Plan	September 2016 Plan of Restoration and Operations
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter of 10 microns or less
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter of 2.5 microns or less
PMLU	post-mining land use
PMP	Probable Maximum Precipitation
PMU	Population Management Unit
PNF	Payette National Forest
POI	probability of instability
POX	pressure oxidation
ppb	parts per billion
ppm	parts per million
PRISM	Parameter-Elevation Regressions on Independent Slopes Model
PRPA	Paleontological Resources Preservation Act of 2009
PRSB	Payette River Scenic Byway
PSD	Prevention of Significant Deterioration
PSHA	probabilistic seismic hazard analysis
PSS	palustrine scrub-shrub
PTC	Permit to Construct
PVG	Potential Vegetation Group
PWS	public water system
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RAMP	Restoration and Access Management Plan
RBSL	risk-based soil screening level
RCA	Riparian Conservation Area
RCFZ	Rabbit Creek Fault Zone
RCM	reclamation cover materials
RCNM	Roadway Construction Noise Model
RCP	Reclamation and Closure Plan
RCRA	Resource Conservation and Recovery Act
REMSAD	Regional Modeling System for Aerosols and Deposition
RFAI	Request for Additional Information
RFFA	Reasonably Foreseeable Future Action
RIB	Rapid Infiltration Basin
Rio ASE	Rio Applied Science and Engineering
RME	reasonable maximum exposure
RMRS	Rocky Mountain Research Station
RNA	Research Natural Area
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
RPA	Reasonable and Prudent Alternative
RS	revised statute

S45+	sandy-skeletal/loamy-skeletal, mixed typic cryorthents
SAG	semi-autogenous grinding
SAHTS	Special Areas of Historic or Tribal Significance
SAWT	Sawtooth Wilderness
SBM	seed bank materials
SCC	Social Cost of Carbon
SCNF	Salmon-Challis National Forest
SCR	secondary contact recreation
SEIS	Supplemental Environmental Impact Statement
SELW	Selway-Bitterroot Wilderness
SF RAMP	South Fork Restoration Access Management Plan
SF <sub>6</sub>	sulfur hexafluoride
SFA	Stream Functional Assessment
SFSR	South Fork Salmon River
SFSRR	South Fork Salmon River Road
SGCN	Species of Greatest Conservation Need
SGLF	Stibnite Gold Logistics Facility
SGP	Stibnite Gold Project
SH	State Highway
SHPO	State Historic Preservation Office
SIC	sulfur-impregnated carbon
SIL	Significant Impact Level
SL	scanline
SM	structure mapping
SMI	Stibnite Mining Inc
SNOTEL	Snow Telemetry
SO <sub>2</sub>	sulfur dioxide
SO <sub>4</sub>	sulfate
SODA	spent ore disposal area
SOP	standard operating procedure
SOPA	Schedule of Proposed Actions
SPCC	Spill Prevention, Control and Countermeasure
SPF	SPF Consulting and Associates
SPL	sound pressure level
SPLNT	Stream and Pit Lake Network Temperature
SRK	SRK Consulting
SRS	Service Revenue Sharing
SS	salmonid spawning
ST	Steelhead Trout
Stantec	Stantec, Inc.
sTC	stoney typic cryorthents
STRATA	Strata, Inc.
SUP	special use permit
SVFZ	Scout Valley Fault Zone

SWE	snow water equivalent
SWPPP	stormwater pollution prevention plan
SWWC	Site-Wide Water Chemistry
TAP	Toxic Air Pollutant
TCP	traditional cultural properties
TDS	total dissolved solids
TEPC	Threatened, Endangered, Proposed or Candidate
THg	total mercury (THg = metallic mercury + MeHg)
Tierra Group	Tierra Group International Ltd.
TMDL	total maximum daily load
TOC	total organic carbon
TPA	trees per acre
tpd	tons per day
tpy	tons per year
TSF	Tailings Storage Facility
TSP	total suspended particulate
TSPQ	Total Sale Program Quantity
TSRC	total soil resource commitment
TSS	total suspended solids
U.S.	United States
UARG	Utility Air Regulatory Group
UCS	unconfined compressive strength
UEFSFSR	Upper East Fork South Fork Salmon River
URS	URS Corporation
US	Uncovered and Stable
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UTV	utility task vehicle
UU	Uncovered and Unstable
VCMQ	Vegetation Classification Mapping and Quantitative Inventory
VHF	very high frequency
VISCREEN	EPA visibility impairment screening model
VMS	Visual Management System
VOC	volatile organic compounds
VOL	volatile organic liquids
vpd	vehicles per day
VQO	Visual Quality Objective
WAD	weak acid dissociable
WCI	Watershed Condition Indicators



WCS	Wildlife Conservation Strategy
WCT	Westslope Cutthroat Trout
WEFZ	West End Fault Zone
WHO	World Health Organization
WHTCLD	Cecil D. Andrus—White Clouds
WLR	Wild Land Recreation
WOTUS	waters of the United States
WQBEL	Water Quality Based Effluent Limitation
WRCC	Western Regional Climate Center
WRF	Weather Research and Forecasting Model
WSDOT	Washington State Department of Transportation
WSR	Wild and Scenic River
WSWCP	Western States Wolverine Conservation Project
WTP	Water Treatment Plant
WUA	Weighted Useable Area
ww	wet weight
YWAM	Youth with a Mission

## 7.2 GLOSSARY

**A-run fish** – Snake River steelhead that return to a stream after 1 year in the ocean.

**Abiotic** – Physical rather than biological; not derived from living organisms

**Acid rock drainage** – The outflow of acidic water from metal mines (or coal mines) derived from the oxidation of sulfide minerals in rock.

**Adaptive Management** – A type of natural resource management in which decisions are made as part of an ongoing process. Adaptive management involves testing, monitoring, evaluation, and incorporating new knowledge into management approaches based on scientific findings and the needs of society (Forest Service 2003).

**Adit** – A horizontal or near horizontal passage leading into an underground mine for the purposes of access or draining.

**Alkalinity** – A chemical measurement of a water's ability to neutralize acids.

**Alluvial/Alluvium** – A deposit of clay, silt, sand, and gravel left by flowing streams in a river valley.

**Antimony** – Natural element with the symbol Sb and atomic number 51; a lustrous gray metalloid in native form; used in batteries, munitions, fire retardants, and ball bearings, among others.

**Aquifer** – A water-bearing layer of rock, sand, or gravel.

**Aquifer cross-flow** – Vertical groundwater flow from one part of a body of rock to another.

**Arsenic** – Natural element with the symbol As and atomic number 33; a metallic element with a steel-grey appearance in native form.

**Arterial Road** – An NFS road that provides service to large land areas and usually connects with other arterials roads or public highways.

**Autoclave** – A vessel used to carry out industrial processes requiring elevated temperature and pressure relative to ambient air temperature and pressure.

**B-run fish** – Snake River steelhead that return to a stream after 2 to 4 years in the ocean.

**Backfill** – Material used to fill a void created by mining.

**Ball Mill** – A type of mechanical fine grinder that uses a horizontal rotating cylinder partially filled with balls, usually metal, which grinds material to a specified particle size by friction and impact with the tumbling balls.

**Bankfull** – The water level at which a stream, river or lake is at the top of its banks and any further rise would result in water overtopping a bank and moving into the flood plain.

**Bedrock** – Solid rock underlying unconsolidated surface materials, such as gravel, soil, or alluvium.

**Bench** – In open pit mines and quarries, the ledge which forms a single level of operation where ore and/or development rock is excavated.

**Benthic** – Pertaining to the bottom of a body of water.

**Bentonite** – A soft, plastic, light-colored clay formed by chemical alteration or volcanic ash.

**Berm** – An artificial ridge or embankment constructed of soil or rock to limit the movement of people or equipment across a certain line or border.

**Biota** – Living material. The flora and fauna of an area (Forest Service 2003).

**Boreal** – Northern, cold habitat areas with conifer trees.

**Borrow material** – Rock, gravel and sand, typically excavated from one area to be used as fill material in another area (especially road construction).

**Burntlog Route** – The proposed mine access route for operations and reclamation under Alternatives 1, 2, and 3. Burntlog Route would start at Landmark on Burnt Log Road (FR 447) and continue on Burnt Log Road until it ends. Approximately 17 miles of new road would be constructed to connect the existing Burnt Log Road to Meadow Creek Lookout Road (FR 51290) and then new road to connect to Thunder Mountain Road (FR 50375) and into the mine site past the proposed worker housing facility.

**Calc-silicate** – A metamorphic rock consisting mainly of calcium-bearing silicate minerals such as diopside and wollastonite; formed by metamorphism of impure limestone or dolomite.

**Candidate species** – Plant and animal species being considered for listing as endangered or threatened, in the opinion of the U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS). Category 1 candidate species are groups for which the FWS or NMFS has sufficient information to support listing proposals; category 2 candidate species are those for which available information indicates a possible problem, but that need further study to determine the need for listing (Forest Service 2003).

**Canopy cover** – Total non-overlapping cover of all trees in a vegetative unit excluding the seedling size class. Trees in the seedling size class are used to estimate canopy cover only when they represent the only structural layer on the site (Forest Service 2003).

**Cessation** – Temporary or complete stopping.

**Cherry Stem Roads** – Roads that extend into an Inventoried Roadless Area or wilderness area are called cherry stemmed roads because of the boundary resembles a cherry stem.

**Cirque** – A bowl-shaped valley produced by glacial action in high mountains.

**Collar** – The surface at the top of a shaft or decline; or the start of a drill hole.

**Collector Road** – An NFS road that serves smaller areas than an arterial road and that usually connects arterial roads to local roads or terminal facilities.

**Colluvium** – Unconsolidated sediments that have been deposited at the base of hillslopes by either rainwash, sheetwash, slow continuous downslope creep, or a combination of these processes.

**Concentrate** – The valuable fraction of ore that is left after non-economic rock material is removed in processing. This material is what is sent for further processing, usually to a refinery or smelter.

**Concurrent reclamation** – Reclamation completed during active construction and operations.

**Confined Aquifer** – An aquifer below the land surface that is saturated with water. Layers of impermeable material are both above and below the aquifer.

**Conifer** – Trees with needle-like foliage and seeds borne in cones.

**Contact Water** – Water that has come in contact with disturbed and/or mining materials and could pick up pollutants and have a potential to carry these pollutants to groundwater or surface water.

**Contouring** – Reshaping ground material into a final landform.

**Conveyor** – Mechanical infrastructure, generally electrically driven, which extends from a receiving point to a discharge point and conveys, transports, or transfers material between those points.

**Core** – Cylindrical samples of rock removed from a drill hole for analysis.

**Cumulative effects** – Impacts on the environment that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (Forest Service 2003).

**Cyanide** – A naturally occurring organic compound composed of carbon and nitrogen (CN). The solid chemical compound, sodium cyanide (NaCN), is dissolved in water to form a solution suitable for the extraction of gold and silver from ore by using a leaching process.

**Cyanidation** – A type of ore processing facility where prepared ore is exposed to aqueous cyanide under a set of specific, controlled conditions to extract gold and silver.

**dBa** – Noise measurement scale (decibels) that is A-weighted (i.e., decibel values of sounds at low frequencies are reduced, compared with unweighted decibels, in which no correction is made for audio frequency).

**Debris flow** – A mass of soil and/or fragmented rock in slurry of water that moves downslope under the influence of gravity and forms muddy deposits in valley floors.

**Decant** – To draw off a liquid so as not to disturb the sediment, with the goal being to separate water from sediment and fines.

**Decline** – A sloped passageway from the surface to where a mineral deposit is located, large enough to allow workers and equipment to access the mineral.

**Degrade** – To measurable change a resource condition for the worse within an identified scale and time frame. Where existing conditions are within the range of desired conditions, “degrade” means to move the existing condition outside of the desired range. Where existing conditions are already outside the range of desired conditions, “degrade” means to change the existing condition to anything measurably worse. The term “degrade” can apply to any condition or condition indicator at any scale of size or time, but those scales need to be identified. This definition of “degrade” is not intended to define degradation for the State of Idaho as it applies to their Antidegradation Policy (IDAPA 16.01.02.051) (Forest Service 2003).

**Delineate** – To mark the outlines of and/or to describe, portray, or set forth with accuracy or in detail.

**Denning habitat or sites** – Habitat and locations used by mammals during reproduction and rearing of their young, when the young are highly dependent on adults for survival (Forest Service 2003).

**Deposit** – An accumulation of natural resources, such as gold and silver, other minerals, metals, coal, oil, gas, etc. that may be pursued for its intrinsic value; e.g., a gold and silver deposit.

**Deposition** – Physical mechanisms, which can be either wet or dry, that convey airborne pollutants to soil and surface water.

**Design feature** – Is an impact-reducing action or design that Midas Gold has committed to in their Plan of Restoration and Operations and supporting documents.

**Desired Condition (DC/DFC)** – Also called Desired Future Condition (DFC), a portrayal of the land, resource, or social and economic conditions that are expected in 50- 100 years if management goals and objectives are achieved. A vision of the long-term conditions of the land (Forest Service 2003).

**Development Rock** – The rock that must be removed and disposed of to gain access to and excavate ore. Development rock typically contains no commercial antimony, gold or silver values. See also: waste rock.

**Discharge** – The volume of water flowing past a point per unit time; commonly expressed as cubic feet per second (cfs) or gallons per minute (gpm).

**Dissolved oxygen** – The amount of free oxygen dissolved in water, expressed in milligrams per liter (mg/L), parts per million (ppm), or in percent of saturation, i.e., with saturation reported relative to the maximum amount of oxygen that can theoretically be dissolved in water at a particular altitude and temperature.

**Drainage basin** – An extent or an area of land from which surface water runoff from rain and melting snow or ice converges to a single point, usually the exit of the basin, where the waters join another waterbody, such as a river, lake, reservoir, estuary, wetland, sea, or ocean.

**Drill hole** – A cylindrical hole advanced into the subsurface to retrieve and examine/analyze material for the purpose of mineral exploration, geotechnical characterization, or to construct a well.

**Drill jumbo** – A drilling jumbo consists of one, two or three rock drill carriages, sometimes a platform, which the miner stands on to load the holes with explosives that clears the face of the tunnel.

**Drilling fluid** – Water and biodegradable, synthetic polymer mud products used to suspend and remove cuttings, maintain hole stability, minimize formation damage, and cool and lubricate the drilling bit and assembly during drilling.

**Drill pad** – A leveled location from which a drilling rig may advance one or more drill holes.

**Drill rig** – A diesel-powered machine used to cut the drill holes and retrieve samples and may be used to construct a well in the drill hole.

**Doré** – A metal alloy bar with gold content that ranges from 60 to 95 percent of gold. Doré would be produced at the mine site and then shipped offsite for further refining.

**Embankment** – A linear structure, usually constructed of earth or rock, extending above the natural ground surface to retain water or tailings.

**Energy Dissipaters** – Structures, usually built of rock or concrete, to disrupt and steady the flow of water; frequently constructed in stream channels, drainage ditches, or spillways.

**Enhancement** – The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area (CWA Section 404).

**Environmental Justice** – Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Executive Order (EO) 12898 states, “Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.”

**Ephemeral stream** – A stream or portion of a stream that flows only in direct response to precipitation or run-off events, and that receives little or no continuous water from springs, snow, or other sources. Unlike intermittent streams, an ephemeral usually does not have a defined stream channel or banks, and its channel is at all times above the water table (Forest Service 2003).

**Equalization tanks** – Holding tanks that allow for provision of steadier outflow with variable inflow.

**Erosion** – The wearing away of the land surface by running water, wind, ice or other geologic processes.

**Escape Raise** – A raise refers to a vertical or inclined excavation that leads from one level of the underground mine to another underground. An escape raise is a method of exit from underground workings which people can access safely in an emergency such as a fire, spill, underground instability, or similar emergency.

**Evapotranspiration** – The process by which water is transferred from the land to the atmosphere by evaporation from waterbodies, soil, and other surfaces and by transpiration from plants.

**Exploration** – The search for deposits of valuable minerals using a variety of methods that can include drilling, sampling, remote sensing, and mining.

**Factor of safety** – The safety margin and is calculated by the strength of the resisting forces divided by the strength of the stress imparted to the feature/structure (in this case, the TSF dam).

**Fault** – A geologic term for a fracture in the Earth’s crust, which has experienced movement.

**Fault gouge** – finely crushed and ground-up rock produced by the friction of movement between two sides of a fault.

**Fauna** – Animals characteristic of a region, period, or special environment.

**Federally Recognized Tribes** – An American Indian or Alaska Native tribal entity that is recognized as having a government-to-government relationship with the United States, with the responsibilities, powers, limitations, and obligations attached to that designation, and is eligible for funding and services from the Bureau of Indian Affairs.

Furthermore, federally recognized tribes are recognized as possessing certain inherent rights of self-government (i.e., tribal sovereignty) and are entitled to receive certain federal benefits, services, and

protections because of their special relationship with the United States. At present, there are 573 federally recognized American Indian and Alaska Native tribes and villages.

**Fill Material** – Soil or rock fragments used to raise the surface of low-lying land.

**Filtrate** – The liquid that has passed through a filter.

**Financial Guarantee** – A financial instrument that guarantees repair of surface resource disturbance, equipment removal, waste disposal, and similar actions. Where more than one agency, federal and/or state, has jurisdiction over a mineral operation, the role of each agency should be defined in a cooperative agreement (FSM 2846). May be secured with cash as a last resort, but preferably credit/debit cards or electronic check processing, corporate surety, deposited securities, an irrevocable letter of credit, or assignment of savings account or certificate of deposit. Individual sureties are unacceptable as reclamation bonds; however, individual sureties can be used for post-reclamation long term work. The penal sum of the instrument must at least equal the cost estimated by the Forest Service to complete reclamation.

**Fishway** – A group of facilities, structures, devices, measures, and project operations that together constitute, and are essential to the success of, an upstream or downstream fish passage system.

**Flash Vessel** – A vessel used to contain evaporation (flash) that occurs by passing a liquid stream through a pressure reduction device, known as a throttling device, at the entrance to the vessel.

**Flocculent** – A substance that promotes the clumping of particles to facilitate separation or settling of solids from a liquid.

**Flora** – Plant or bacterial life characteristic of a region, period, or special environment.

**Flotation** – The process of separating small particles of various materials by treatment with chemicals in water in order to make some particles adhere to air bubbles and rise to the surface for removal while others remain in the water.

**Fluvial** – Of, relating to, or inhabiting a river or stream.

**Footwall** – A block of rock that lies on the underside of an inclined fault or of a mineral deposit.

**Forbs** – Broadleaf ground vegetation with little or no woody material (Forest Service 2003).

**Forest Road or Trail** – A road or trail wholly or partly within or adjacent to and serving the NFS that the Forest Service determines is necessary for the protection, administration, and utilization of the NFS and the use and development of its resources.

**Formation** – A body of rock strata (layers) that consists of a certain lithology (physical characteristic of rock) or combination of lithologies.

**Fracture** – A subplanar discontinuity in a rock or soil formed by mechanical stresses. A fracture is visible to the naked eye and is open (i.e., not filled with minerals).

**Freeboard** – A factor of safety added in channel and dam design, usually expressed in additional feet of water carrying capacity or storage above a design storm event.

**Fry** – Young or newly hatched fish.

**Fugitive Dust** – Dust particles suspended randomly in the air, usually from road travel, excavation, and rock loading operations.

**Geochemistry** – The study of the distribution and amounts of chemical elements in minerals, ores, rocks, soils, water and the atmosphere and the study of the circulation and transformations of these elements in nature.

**Geographic Information System (GIS)** – A computer system that stores and uses spatial (mappable) data (Forest Service 2003).

**Geomorphic** – Characteristics, configuration and evolution of rocks and land forms.

**Geotechnical** – Concerned with the engineering design aspects of slope stability, settlement, Earth pressures, bearing capacity, seepage control and erosion.

**Goal** – As Forest Plan management direction, a goal is a concise statement that helps describe a desired condition, or how to achieve that condition. Goals are typically expressed in broad, general terms that are timeless, in that there are no specific dates by which the goals are to be achieved. Goal statements form the basis from which objectives are developed (Forest Service 2003).

**Grade** – A measure of the potential value of ore, based on the degree of purity of the minerals and the relative percentages of the minerals contained in the rock.

**Groundwater** – Water beneath the land surface in the zone of saturation below the water table.

**Grout** – Bentonite- or cement-based material used to create a water-tight seal.

**Growth Media** – Material capable of establishing and sustaining an effective and permanent vegetation cover.

**Growth Media Additive** – Composted organic material that can be added to growth media to increase the volume of the growth media such as cleared and chipped vegetation, grubbed organics, and food wastes.

**Grubbed Organics** – Vegetative roots and other organic material that lies near and just below the ground surface and is removed as part of preparation of a site for construction.

**Guideline** – As Forest Plan management direction, a guideline is a preferred or advisable course of action generally expected to be carried out. Deviation from compliance does not require a Forest Plan amendment (as with a standard), but rationale for deviation must be documented in the project decision document (Forest Service 2003).

**Habitat** – A place that provides seasonal or year-round food, water, shelter, and other environmental conditions for an organism, community, or population of plants or animals (Forest Service 2003).

**Haul Road** – A road used by large (typically off-road) trucks to relocate material (development rock or ore) for deposition or processing.

**Heap leach** – An industrial mining process to extract precious metals from ore. Typically, crushed ore is heaped where it can be irrigated with a weak acid and/or cyanide leach solution to dissolve the valuable metals into a solution that is collected and further refined.



**Heap leach pad** – The impermeable plastic, asphalt, and/or clay-lined pad upon which mined ore is deposited to be leached.

**Highwall** – The unexcavated face of exposed overburden and/or ore in an open pit mine.

**Home range** – The area used by an animal for foraging, mating, and rearing offspring.

**Horizon (soil)** – A layer parallel to the soil surface, whose physical characteristics differ from the layers above and beneath.

**Hydraulic** – Dealing with the mechanical properties of liquids.

**Hydro-cyclone** – A device to classify, separate or sort particles in a liquid suspension based on the ratio of their centripetal force to fluid resistance.

**Hydrologic** – Refers to the properties, distribution, and effects of water. “Hydrology” is the study of water; its occurrence, circulation, distribution, properties, and reactions with the environment.

**Highway-Legal Vehicle** – Any motor vehicle that is licensed or certified under state law for general operation on all public roads in the state. Operators of highway-legal vehicles are subject to state traffic law, including requirements for operator licensing.

**Idaho Roadless Area** – Areas designated pursuant to 36 CFR Part 294 and identified in a set of maps maintained at the national headquarters office of the Forest Service.

**Infiltration** – The movement of water or other fluid into the soil (or other medium) through pores or other openings.

**Infrastructure** – The facilities, utilities, and transportation systems needed to meet public and administrative needs.

**Interim reclamation** – Temporary stabilization of land surfaces during operations.

**Intermittent stream** – A stream or portion of a stream that flows only in direct response to precipitation or seasonal runoff, and that receives little or no water from springs or other permanent sources. Unlike ephemeral streams, an intermittent has a well-defined channel and banks, and it may seasonally be below the water table (Forest Service 2003).

**Land and Resource Management Plan (LRMP)** – LRMPs guide natural resource management activities on lands administered by the Payette and Boise National Forests. They describe management goals and objectives, resource protection methods, desired resource conditions, and the availability and suitability of lands for resource management. They provide management direction to ensure sustainable ecosystems and resilient watersheds capable of providing a sustainable flow of beneficial goods and services to the public.

**Landfarm** – Landfarming is a biological waste treatment process wherein contaminated soils or sediments are spread and incorporated into the upper soil zone and periodically tilled to aerate the mixture, using equipment typically seen in agriculture. In this way, natural microbial action breaks down contaminants, particularly hydrocarbons.

**Leach** – To remove (nutritive, valuable, or harmful elements) from soil, rock, or ore by percolation.

**Leachate** – The solution obtained by leaching.

**Leaching** – The process of applying a chemical agent to bond preferentially with and dissolve materials such as gold and silver.

**Lift** – A layer of development rock placed in approximately the same time with one outslope. Each lift in the development rock storage facility is followed by a setback from the outslope to create a bench and then construction of the next lift.

**Liner** – Low permeability material (clay or synthetic) used to create a barrier, such as between tailings or water and the underlying ground surface.

**Loam** – Soil composed of a relatively even distribution of sand, silt and clay. Loamy soils are typically well-drained and ideal for supporting vegetation.

**Local Road** – An NFS road that connects a terminal facility with collector roads, arterial roads, or public highways and that usually serves a single purpose involving intermittent use.

**Macro-invertebrate** – An animal without vertebrae (i.e., backbone) that is large enough to be seen without use of a microscope.

**Magnitude** – A number that characterizes the relative size of an earthquake. Magnitude is based on measurement of the maximum motion recorded by a seismograph. Several scales have been defined, but all magnitude scales should yield approximately the same value for any given earthquake.

**Maintenance Level** – A Forest Service defined level of service provided by, and maintenance required for, a specific road.

**Make-up Water** – The amount of water which is added to compensate for water losses in a process. In the case of ore processing, water losses can occur through evaporation or through entrainment with the ore particles in the tailings discharge.

**Management area** – A land area with similar management goals and a common prescription, as described in the Forest Plan (Forest Service 2003).

**Management indicator species (MIS)** – Representative species whose habitat conditions or population changes are used to assess the impacts of management activities on similar species in a particular area. MIS are generally presumed to be sensitive to habitat changes (Forest Service 2003).

**Management Prescription Category (MPC)** – Management prescriptions are defined as, “Management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives” (36 CFR 219.3). MPCs are broad categories of management prescriptions that indicate the general management emphasis prescribed for a given area. They are based on Forest Service definitions developed at the national level, and represent management emphasis themes, ranging from Wilderness (1.0) to Concentrated Development (8.0). The national MPCs have been customized during Forest Plan revision to better fit the needs and issues of the Southwest Idaho Ecogroup Forests (Forest Service 2003).

**Matrix** – In landscape ecology, a matrix is usually the most extensive and connected element present in a landscape. Patches and corridors are often imbedded in the matrix. The matrix may play a dominant role in the functioning of the landscape without being the most extensive landscape element. Determining the matrix in a landscape depends either on connectivity, dominance, or function. Each landscape should be evaluated individually (Forest Service 2003).

**Maximum credible earthquake (MCE)** – The largest earthquake that reasonably appears capable of occurring under the conditions of the presently known geological environment (IDAPA 36.03.06). The MCE represents the most severe ground shaking that could be expected at the site (return period from 2,500 years up to that of the MCE) for which structures must be designed to resist collapse and uncontrolled release.

**Maximum design earthquake** – An earthquake that would produce the maximum level of ground motion (shaking) for which a structure (e.g., TSF dam) is to be designed or evaluated.

**Merchantable** – Logs exceeding a minimum size and a minimum usable value that are suitable for sale (Stokes et al. 1989).

**Metabolic** – A complex of physical and chemical events of photosynthesis, respiration, and the synthesis and degradation of organic compounds (in plants).

**Meteoric Water** – Water derived from precipitation (snow and rain).

**Mine** – An opening or excavation in the ground for the purpose of extracting minerals.

**Mine life** – The period in which the ore reserves will be extracted.

**Mineralization** – The process by which a mineral or minerals are introduced to rock, resulting in a valuable or potentially valuable deposit; a zone of ore.

**Mining Act of 1872** – A United States federal law that authorizes and governs prospecting and mining for economic minerals, such as gold, platinum, and silver, on federal public lands.

**Mitigate** – To avoid, minimize, reduce, eliminate, rectify, or compensate for impacts or degradation that might otherwise result from management actions (Forest Service 2003).

**Mitigation measure** – Modifications of actions that: 1) avoid impacts by not taking a certain action or parts of an action in a given area of concern; 2) minimize impacts by limiting the degree or magnitude of the actions and its implementation; 3) rectify impacts by repairing, rehabilitating, or restoring the affected environment; 4) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or 5) compensate for impacts by replacing or providing substitute resources or environments (Forest Service 2003).

**Mosaic** – A varying pattern of vegetation types.

**Motorized Mixed Use** – Designation of an NFS road for use by both highway-legal and non-highway-legal motor vehicles.

**Multi-storied** – Tree stands with trees of multiple heights.

**National Forest System (NFS) Road/Trail** – A forest road/trail other than a road/trail which has been authorized a legally documented right-of-way held by a state, county, or local public road authority.

**Neutralization** – A chemical reaction in which an acid and a base react quantitatively with each other. In a reaction in water neutralization results in there being no excess of hydrogen or hydroxide ions present in solution. The pH of the neutralized solution depends on the acid strength of the reactants.

**No Action Alternative** – The most likely condition expected to exist if current management practices continue unchanged. The analysis of this alternative is required for federal actions under the National Environmental Policy Act (NEPA) (Forest Service 2003).

**Nocturnal** – Relating to or occurring at night.

**Non-conforming** – Section 4(d) of the Wilderness Act is titled “special provisions.” These non-conforming uses are compromises that diminish the quality of wilderness character but were written into the original law. These special exceptions are qualified to various degrees to provide federal wilderness managers with the ability to regulate these uses to minimize their impacts on wilderness.

**Non-Contact Water** – Water that has not come in contact with mining disturbance and/or mining materials.

**Non-forested** – Having grass, shrub, forb or non-vegetation cover.

**Non-Highway-Legal Vehicle** – Any motor vehicle that is not licensed or certified under state law for general operation on all public roads within the state. Operators of non-highway-legal vehicles are subject to state requirements, if any, for licensing and operation of the vehicle in question.

**Non-serotinous** – Not exhibiting the characteristics of being serotinous (see definition of serotinous).

**Noxious weed** – A state -designated plant species that causes negative ecological and economic impacts to both agricultural and other lands within the state (Forest Service 2003).

**Objective** – As Forest Plan management direction, an objective is a concise time-specific statement of actions or results designed to help achieve goals. Objectives form the basis for project-level actions or proposals to help achieve Forest goals. The time frame for accomplishing objectives, unless otherwise stated, is generally considered to be the planning period, or the next 10 to 15 years. More specific dates are not typically used because achievement can be delayed by funding, litigation, environmental changes, and other influences beyond the Forest’s control (Forest Service 2003).

**Off-Highway Vehicle** – Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain.

**Open-pit mining** – A type of surface mining that involves excavation of the ore and development rock by above ground techniques. The result of such an operation is known as an “open pit.”

**Ordinary high water mark (OHWM)** –The mark on all watercourses that will be found by examining the beds and banks and ascertaining where the presence and action of waters are so common and continuous in ordinary years as to mark upon the soil a character distinct from that of the abutting upland (Boise Forest Plan).

**Ore** – A deposit of rock from which valuable material or minerals can be economically mined.

**Ore Processing Facility** – A facility where the valuable constituent (e.g., gold, silver, antimony) is separated from the undesirable or non-economic constituent of the ore material.

**Outfall** – The outlet of a body of water. The location of the mouth of the stream or the outlet of the lake; or the vent or end of a drainpipe, tube, ditch, canal that carries water or tailings slurry.

**Outslope** – The angle of the outside slope face of a constructed facility such as a development rock storage facility (DRSF) or tailings storage facility (TSF).

**Overburden** – Materials overlying an ore or mineral body that are displaced during mining without being processed. Also known as “waste” or “spoil.” It is typically not contaminated with toxic components.

**Over-Snow Vehicle** – A motor vehicle that is designed for use over snow and that runs on a track or tracks and/or ski or skis, while in use over snow.

**Palustrine** – Relating to a system of inland, non-tidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface).

**Parameter** – A variable as a part of a set of comparable variables or limits, boundaries or guidelines.

**Partial retention (PR)** – A category of Visual Quality Objective (VQO) where human activities may be evident to the casual Forest visitor but must remain subordinate to the characteristic landscape (Forest Service 2003).

**Patented Claim** – Land granted by the U.S. government to a private party based on mineral value and meeting other requirements under the federal mining laws. It is private property whereby the owner has title to the surface and mineral resources.

**Perennial stream** – A stream that typically maintains year-round surface flow, except possibly during extreme periods of drought. A perennial stream receives its water from springs or other permanent sources, and the water table usually stands at a higher level than the floor of the stream (Forest Service 2003).

**Permeability** – The ease with which a porous medium can transmit water or other fluids.

**pH** – A measure of the acidity or basicity of an aqueous solution.

**Piezometer** – A device placed in a borehole to measure the underground pressure of groundwater – effectively measuring the level to which the groundwater would rise without a confining (e.g., clay, silt) layer.

**Plasticity** (of soil) – The property by which it undergoes deformation without cracking or fracturing. In general, soils with low plasticity are more geotechnically stable than soils with high plasticity.

**Point source** – A single, identifiable source of measurable discharge or emissions, usually referring to water or air.

**Porous media** – A material containing void spaces, some interconnected, in a matrix of solid material.

**Portal** – Entrance to an underground mine.

**Practicable (or feasible)** – Capable of being reasonably done under practical conditions, including economic and technical factors.

**Prescribed Burning** – Deliberate use of fire under conditions where the area to be burned is predetermined and the intensity of the fire is controlled (Stokes et al .1989).

**Presumptive** – Based on presumption or probability; affording reasonable ground for belief in the absence of further information.

**Private Road** – A road under private ownership authorized by an easement granted to a private party or a road that provides access pursuant to a reserved or outstanding right.

**Probable Maximum Precipitation** – The theoretically greatest depth of precipitation for a given duration that is physically possible over a particular drainage area at a certain time of year; in practice, this is derived over flat terrain by storm transposition and moisture adjustment to observed storm patterns.

**Probable Mineral Reserve** – The economically mineable part of the measured mineral resource.

**Project** – The Stibnite Gold Project (SGP).

**Project area** – The area encompassing project activities, including all access roads, transmission lines, and support facilities for all action alternatives.

**Public Road** – A road under the jurisdiction of and maintained by a public road authority and open to public travel.

**Raise** – Underground opening driven upward from one level to a higher level or to the surface; a raise may be either vertical or inclined. Also, a stage of embankment construction.

**Recessive weathering** – The surrounding rock (in this case the rock on either side of a fault) is more resistant to weathering than the fault gouge material.

**Recharge** – The process by which water enters the groundwater system (zone of saturation below the water table).

**Reclamation (mine facilities)** – Reclamation can include removing facilities, equipment, and materials; recontouring disturbed areas to near pre-mining topography; isolating, neutralizing, or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and/or seedbed preparation, and revegetation (Forest Service 2003).

**Reclamation cost estimate** – An estimate of the direct and indirect costs to the government to complete reclamation of a mineral operation.

**Reclamation bond** – Bonds guarantee repair of surface resource disturbance, equipment removal, waste disposal, and similar actions (FSM 6500 – Finance and Accounting, Chapter 6560 – Bonding Administration, 6561.4).

**Recommended wilderness areas (RWAs)** – Areas (generally identified during the preparation or revision of Forest Plans) that the Forest Service recommends to Congress as candidates for designation as Wilderness. Only Congress can designate wilderness.

**Redd** – A spawning nest built by fish (such as salmon and steelhead) in the gravel of streams or the shoreline of lakes for the deposition and fertilization of eggs.

**Re-establishment** – The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions (CWA Section 404).

**Regolith** – A general term used in reference to unconsolidated rock, alluvium or soil material on top of the bedrock. Regolith may be formed in place or transported in from adjacent lands.

**Rehabilitation** – The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function but does not result in a gain in aquatic resource area (CWA Section 404).

**Remote sensing** – The scanning of the Earth by satellite or high-flying aircraft in order to obtain information about the Earth.

**Restoration** – Management actions or decisions taken to restore the desired conditions of habitats, communities, ecosystems, resources, or watersheds. For soil, water, riparian, or aquatic resources, restoration may include any one or a combination of active, passive, or conservation management strategies or approaches (Forest Service 2003).

**Return period** (or recurrence interval) – The estimated average time between earthquake events.

**Right-of-way** – A strip of land or corridor over which a powerline, access road, maintenance road, or other road can pass.

**Riparian areas or zones** – Terrestrial areas where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial and/or intermittent water, associated with high water tables, and soils that exhibit some wetness characteristics (Forest Service 2003).

**Road decommissioning** – Activities that result in the stabilization and restoration of unneeded roads to a more natural state (36 CFR 212.1, FSM 7705) (Forest Service 2003).

**Roof pendant** – A mass of original rock that remains after being intruded by igneous rock and projects downward into the intrusive rock (in this case, the batholith).

**Runoff** – Precipitation or snowmelt that is not retained on the site where it falls and is not absorbed by the soil; the natural drainage away from an area.

**SAG mill** – SAG is an acronym for semi-autogenous grinding (defined below). SAG mills are essentially autogenous mills that uses grinding balls like a ball mill.

**Salmonid** – Any of the family (Salmonidae), which are elongate bony fishes that have the last three vertebrae upturned, including salmon, trout, chars, freshwater whitefishes and graylings.

**Sediment** – Earth material transported, suspended and deposited by air, water or ice; also the same material once it has been deposited.

**Sedimentation** – The action or process of forming and depositing sediments. Stream sedimentation occurs when water velocity cannot transport the bed load and suspended matter is deposited by gravity along the streambed (Forest Service 2003).

**Seep** – A spot where water trickles out of the ground to form a pool.

**Semi-autogenous Grinding** – A size reduction process for ore which uses a large rotating drum to throw ore and steel balls in a cascading fashion to reduce the ore size by impact and compressive grinding with other ore rock, the steel balls and the walls of the drum.

**Sensitive species** – A Forest Service or BLM designation, sensitive plant and animal species are selected by the Regional Forester or the BLM State Director because population viability may be a concern, as evidenced by a current or predicted downward trend in population numbers or density, or a

current or predicted downward trend in habitat capability that would reduce a species' existing distribution. Sensitive species are not addressed in or covered by the Endangered Species Act (Forest Service 2003).

**Seral-stage** – A Sere is a sequence of plant communities that successively follow one another in the same habitation from the pioneer stage to a mesic climax, and seral-stage refers to the community stage a stand occupies at a given time within a sere (Burns et al. 1990).

**Serotinous** – Remaining closed on the tree with seed dissemination delayed or occurring gradually. In the case of lodgepole pines in the western portions of the Forests, fire is required to open cones for seed dispersal.

**Silt fence** – A temporary sediment control device consisting of a piece of synthetic filter fabric stretched between a series of wooden or metal fence stakes.

**Sinuosity** – State of having curving or bending shape, as in a stream course.

**Silviculture** – The care and tending of stands of trees to meet specific objectives (Forest Service 2003).

**Slump** – as defined for the EIS: Geohazard assessment reports (STRATA 2013, 2014a, 2016) use the term “slough” and “slump” interchangeably to refer to “small landslides” of less than 0.1 acre. For purposes of consistency, this EIS uses the term “slump” in the text. However, figures originating from the referenced geohazard assessment report may still retain the use of “slough.”

**Slurry** – A highly fluid mixture of water and fine material; either naturally occurring such as a muddy lake-bottom deposit, or human-made like the ground rock (tailings) and water remaining after mineral extraction.

**Smelter** – An industrial facility that uses heat and a chemical reducing agent to decompose ore, driving off other elements as gasses or slag and leaving the metal behind.

**Smelting** – A process to extract metals from ore involving heating and melting.

**Soil nail walls** -

**Soundscape** – Refers to both the natural acoustic environment, including animal vocalizations and the sounds of weather and other natural elements; and environmental sounds created by human activity, including conversation, work, and sounds of mechanical origin resulting from use of industrial technology.

**Standard** – As Forest Plan management, a binding limitation placed on management actions. It must be within the authority and ability of the Forest Service to enforce. A project or action that varies from a relevant standard may not be authorized unless the Forest Plan is amended to modify, remove, or waive application of the standard (Forest Service 2003).

**Steelhead** – A rainbow trout that migrates to the sea before returning to freshwater to spawn.

**Stibnite** – A sulfide mineral with the formula  $\text{Sb}_2\text{S}_3$ . A lead-gray mineral with a brilliant metallic luster. It is the principal ore of antimony. Also name of a historic mining town in central Idaho.

**Stratum** – One of a series of layers, levels, or gradations in an ordered system, such as a sequence of sedimentary rocks.



**Stockpile** – Material piled for future use.

**Stope** – An area of rock excavated in an underground mine, usually by blasting the rock and letting it fall into previously mined open areas below the stope.

**Stormwater** – The runoff that reaches human-made channel structures or natural stream channels immediately after rainfall or snowmelt.

**Sulfide** – A mineral compound characterized by the bonding of the element of sulfur (S), typically with a metal or metals.

**Sub-alpine environment** – Of, relating to, or inhabiting high upland slopes and especially the zone just below the timberline. It is the biotic zone (caused by living organisms) immediately below tree line.

**Sump** – A small excavated pit for water supply and storage.

**Surface water channels** – Constructed pathways that change the flow of water from its natural course; mostly by means of a ditch.

**Supernatant** – The liquid that remains in a surface pool after the solid tailings settle in the tailings storage facility.

**Supernatant Pool** – In a tailings impoundment, the water that gathers above the settled tailings material.

**Synthetic liner** – A protective layer comprised of man-made materials installed along the bottom, sides and/or of a waste disposal area, leach pad, or pond to reduce fluid migration into or out of that disposal area, pad or pond, or to facilitate the collection of mineral-rich leachate.

**Tailings** – The non-economic, ground rock material that remains after the valuable minerals have been removed from the ore by milling and subsequent mineral recovery circuits.

**Tailings Storage Facility (TSF)** – The TSF embankment and all associated infrastructure needed to safely, efficiently and successfully manage and store tailings.

**Temporary road** – Roads authorized by contract, permit, lease, other written authorization, or emergency operation, that are not intended to be part of the forest transportation system, and that are not necessary for long-term resource management (Forest Service 2003).

**Terrestrial** – Organisms occurring on land.

**Threatened species** – Designated by the FWS or NMFS; a plant or animal species given federal protection because it is likely to become endangered throughout all or a specific portion of its range within the foreseeable future (Forest Service 2003).

**Topographic quadrangle map** – A type of map characterized by large-scale detail and quantitative representation of relief, typical scale is 1:24,000, where 1-inch equals 2,000 actual feet.

**Topsoil** – The upper, outermost layer of soil, usually the top 2 inches (5.1 cm) to 8 inches (20 cm). It has the highest concentration of organic matter and microorganisms and is where most of the Earth's biological soil activity occurs.

**Total maximum daily load (TMDL)** – TMDL is the sum of waste load allocations for point sources, non-point sources, natural background, and a margin of safety. A TMDL specifies the amount of a pollutant

that needs to be reduced to meet water quality standards set by the state. TMDL is used in a process to attain water quality standards that (1) identifies water quality problems and contributing pollutant sources, (2) allocates pollution control responsibilities among sources in the watershed, and (3) provides a basis for taking actions needed to restore a water body (Forest Service 2003).

**Total organic carbon** – The amount of carbon bound in an organic compound, which may refer to the amount of organic carbon in a water or soil sample.

**Tributary** – A river or stream flowing into a larger river or lake.

**Turbidity** – Thick or opaque with, or as if with, stirred up sediment.

**Underground Mining** – A mining method consisting of an adit decline or shaft access where ore is mined using various methods and hauled to the surface.

**Understory** – Vegetation, usually shrubs, forbs, and grasses growing beneath taller trees.

**Unconfined aquifer** – The upper surface of the aquifer is the water table. Unconfined aquifers are directly overlain by an unsaturated zone or a surface waterbody.

**Unconsolidated** – Loosely arranged.

**Underflow** – The flow of groundwater in alluvial materials beneath and immediately adjacent to a stream and flowing in the same general direction as the stream.

**Viscosity** – The property of resistance to flow in a fluid or semi-fluid.

**Waste Rock** – The rock that must be removed and disposed of to gain access to and excavate ore. Also referred to as “development rock.”

**Waters of the U.S.** – A jurisdictional term from the Clean Water Act (CWA) and implementing regulations referring to wetlands, streams, and other waterbodies within the scope of fill permitting requirements under the CWA.

**Watershed** – Region or area drained by surface and groundwater flow in rivers, streams, or other surface channels. A smaller watershed can be wholly contained within a larger one, as watersheds are hierarchal in structure.

**Water table** – A surface at or near the top of the zone of saturation where the fluid pressure is equal to atmospheric pressure. In the field, the water table is defined by the level of water in wells that penetrate the saturated zone.

**Weak acid dissociable cyanide** – A method of conservatively estimating cyanide toxicity through measurement of both free cyanide and weakly bonded cyanide species that are released when subjected to a weak acid solution.

**Wetlands** – Land areas that are wet at least for part of the year, are poorly drained, and are characterized by hydrophytic vegetation, hydric soils, and wetland hydrology. Examples of wetlands include swamps, marshes, and bogs (Forest Service 2003).

**Wilderness areas** – Areas that are without developed and maintained roads, and that are substantially natural, and that Congress has designated as part of the National Wilderness Preservation System (Forest Service 2003).

**Wildland/urban interface** – The line, area, or zone where structures and other human developments meet or intermingle with wildland or vegetative fuel. Interface is further delineated into the following types:

(a) wildland/urban interface—developed areas with residential structures where many structures border wildland on a broad front.

(b) wildland/rural interface—developed areas with private residential structures where developments are few in number scattered over a large area surrounded by wildland (Forest Service 2003).

**Windrow** – A long line of material such as topsoil or vegetation.

**Yellow Pine Route** – The mine access route during the initial construction period for Alternatives 1, 2, and 3 and the mine access route throughout construction, operations and reclamation under Alternative 4. From Warm Lake the Yellow Pine Route would be via Johnson Creek Road (County Road 10-413) to Yellow Pine, and from Yellow Pine to the mine site via the East Fork Road (NFS Road 50412, also known as Stibnite Road) to Thunder Mountain Road.

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**SECTION 3.8, SURFACE WATER AND GROUNDWATER QUANTITY**

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## 9 INDEX

Access Roads	<p>ES-1, ES-2, ES-9, ES-13, ES-14, ES-17, ES-18, ES-25, ES-31, ES-32, ES-34, ES-35, 1-2, 1-5, 2-5, 2-8, 2-9, 2-11, 2-12, 2-19, 2-20, 2-55, 2-57, 2-71, 2-73, 2-75, 2-84, 2-87, 2-91, 2-92, 2-108, 2-111, 2-112, 2-116, 2-119, 2-123, 2-124, 2-126, 2-129, 2-130, 2-133, 2-134, 2-136, 2-139, 2-141, 2-149, 2-155, 2-156, 2-158, 2-159, 3.1-1, 3.1-2, 3.2-1, 3.2-20, 3.2-24, 3.2-26, 3.5-2, 3.5-18, 3.5-19, 3.5-20, 3.7-1, 3.7-12, 3.8-3, 3.8-9, 3.9-1, 3.9-45, 3.11-2, 3.11-3, 3.11-4, 3.11-15, 3.11-24, 3.11-25, 3.11-26, 3.11-27, 3.12-1, 3.12-80, 3.12-81, 3.15-1, 3.15-8, 3.15-9, 3.15-11, 3.17-4, 3.19-5, 3.19-6, 3.19-8, 3.20-7, 3.20-8, 3.23-8, 3.23-9, 3.23-17, 3.23-37, 4.1-4, 4.1-8, 4.1-10, 4.2-11, 4.2-15, 4.2-16, 4.2-17, 4.3-2, 4.3-3, 4.3-17, 4.3-22, 4.3-24, 4.3-43, 4.3-45, 4.3-49, 4.3-50, 4.3-53, 4.3-54, 4.3-60, 4.3-61, 4.3-62, 4.3-65, 4.3-70, 4.4-13, 4.4-14, 4.4-15, 4.4-17, 4.4-20, 4.4-23, 4.4-30, 4.5-5, 4.5-7, 4.5-17, 4.5-19, 4.5-42, 4.5-45, 4.6-2, 4.6-3, 4.6-6, 4.6-7, 4.6-8, 4.6-10, 4.6-11, 4.6-14, 4.6-15, 4.6-16, 4.6-18, 4.6-19, 4.6-23, 4.6-24, 4.6-25, 4.6-26, 4.6-27, 4.6-28, 4.6-29, 4.6-30, 4.6-31, 4.6-34, 4.6-35, 4.6-37, 4.6-39, 4.6-41, 4.6-43, 4.6-44, 4.6-45, 4.6-46, 4.6-47, 4.6-50, 4.6-52, 4.6-53, 4.6-55, 4.7-4, 4.7-8, 4.7-10, 4.7-12, 4.7-13, 4.7-14, 4.7-18, 4.9-1, 4.9-46, 4.9-49, 4.9-50, 4.9-51, 4.9-52, 4.9-53, 4.9-54, 4.9-55, 4.9-85, 4.9-86, 4.9-87, 4.9-88, 4.9-89, 4.9-90, 4.9-110, 4.9-116, 4.9-117, 4.9-118, 4.9-119, 4.9-120, 4.9-123, 4.9-125, 4.9-134, 4.9-135, 4.9-140, 4.10-6, 4.10-10, 4.10-11, 4.10-16, 4.10-17, 4.10-18, 4.10-20, 4.10-21, 4.10-22, 4.10-25, 4.10-26, 4.10-28, 4.10-29, 4.10-30, 4.10-32, 4.10-34, 4.10-35, 4.10-36, 4.10-38, 4.10-39, 4.10-41, 4.10-42, 4.10-46, 4.11-6, 4.11-8, 4.11-10, 4.11-12, 4.11-14, 4.11-15, 4.11-22, 4.11-24, 4.11-25, 4.11-32, 4.11-34, 4.11-41, 4.11-43, 4.11-53, 4.11-58, 4.11-60, 4.11-62, 4.11-63, 4.11-64, 4.12-1, 4.12-2, 4.12-15, 4.12-20, 4.12-21, 4.12-23, 4.12-24, 4.12-31, 4.12-32, 4.12-55, 4.12-56, 4.12-58, 4.12-67, 4.12-74, 4.12-86, 4.12-94, 4.12-96, 4.12-99, 4.12-102, 4.12-117, 4.12-130, 4.12-139, 4.12-140, 4.12-143, 4.12-184, 4.12-198, 4.12-203, 4.12-204, 4.13-2, 4.13-3, 4.13-4, 4.13-6, 4.13-7, 4.13-8, 4.13-9, 4.13-11, 4.13-12, 4.13-13, 4.13-14, 4.13-15, 4.13-16, 4.13-17, 4.13-18, 4.13-19, 4.13-21, 4.13-22, 4.13-24, 4.13-25, 4.13-26, 4.13-27, 4.13-28, 4.13-30, 4.13-31, 4.13-32, 4.13-33, 4.13-35, 4.13-36, 4.13-37, 4.13-39, 4.13-41, 4.13-42, 4.13-43, 4.13-45, 4.13-46, 4.13-48, 4.13-49, 4.13-50, 4.13-52, 4.13-54, 4.13-56, 4.13-57, 4.13-58, 4.13-59, 4.13-60, 4.13-61, 4.13-63, 4.13-64, 4.13-65, 4.13-67, 4.13-68, 4.13-69, 4.13-70, 4.13-72, 4.13-73, 4.13-75, 4.13-77, 4.13-78, 4.13-79, 4.13-80, 4.13-82, 4.13-83, 4.13-85, 4.13-88, 4.13-90, 4.13-92, 4.13-93, 4.13-94, 4.13-95, 4.13-96, 4.13-98, 4.13-99, 4.13-101, 4.13-104, 4.13-105, 4.13-108, 4.13-109, 4.13-112, 4.13-115, 4.13-116, 4.14-7, 4.14-8, 4.14-9, 4.14-11, 4.14-16, 4.14-17, 4.14-18, 4.15-1, 4.15-2, 4.15-3, 4.15-4, 4.15-5, 4.15-6, 4.15-8, 4.15-9, 4.15-10, 4.15-13, 4.15-14, 4.15-15, 4.15-17, 4.15-18, 4.15-19, 4.15-20, 4.15-22, 4.15-23, 4.15-24, 4.16-2, 4.16-3, 4.16-5, 4.16-8, 4.16-12, 4.16-14, 4.16-16, 4.16-17, 4.16-18, 4.16-19, 4.16-21, 4.16-23, 4.16-25, 4.16-32, 4.17-5, 4.17-6, 4.17-7, 4.17-8, 4.17-9,</p>
--------------	---

Access Roads (continued)	4.17-10, 4.17-11, 4.17-12, 4.17-13, 4.17-15, 4.17-19, 4.17-20, 4.17-23, 4.17-24, 4.18-1, 4.18-10, 4.18-22, 4.18-23, 4.18-26, 4.18-27, 4.18-29, 4.18-30, 4.18-33, 4.18-34, 4.19-5, 4.19-7, 4.19-9, 4.19-10, 4.19-13, 4.19-18, 4.19-20, 4.19-21, 4.19-25, 4.19-29, 4.19-34, 4.19-42, 4.19-44, 4.19-45, 4.19-49, 4.19-50, 4.19-55, 4.19-56, 4.19-57, 4.19-64, 4.19-66, 4.20-2, 4.20-6, 4.20-8, 4.20-9, 4.20-10, 4.20-12, 4.20-13, 4.20-14, 4.20-15, 4.20-17, 4.20-23, 4.20-25, 4.20-33, 4.20-34, 4.20-35, 4.20-41, 4.20-42, 4.20-43, 4.20-45, 4.20-46, 4.20-47, 4.20-48, 4.20-50, 4.20-52, 4.20-53, 4.20-55, 4.21-18, 4.21-44, 4.21-47, 4.21-48, 4.21-50, 4.22-2, 4.22-9, 4.22-11, 4.22-12, 4.22-15, 4.22-16, 4.23-3, 4.23-6, 4.23-10, 4.23-11, 4.23-12, 4.23-13, 4.23-14, 4.23-18, 4.23-19, 4.23-20, 4.23-25, 4.23-34, 4.23-37, 4.23-39, 4.23-40, 4.23-42, 4.23-46, 4.23-47, 4.23-48, 4.23-49, 4.23-50, 4.23-51, 4.23-52, 4.23-53, 4.23-54, 4.23-55, 4.23-56, 4.23-57, 4.23-58, 4.23-60, 4.23-61, 4.23-65, 4.23-66, 4.23-69, 4.23-71, 4.23-80, 4.23-85, 4.23-87, 4.24-3, 4.24-9
Acid Rock Drainage	ES-24, ES-25, 2-148, 2-149, 3.9-22, 3.9-53, 3.9-60, 4.9-1, 4.9-9, 4.9-12, 4.9-18, 4.9-139, 4.9-143
Affected Environment	3.1-1, 3.2-32, 3.3-1, 3.3-14, 3.5-1, 3.9-58, 3.12-5, 3.12-7, 3.12-9, 3.12-15, 3.12-16, 3.13-93, 3.16-1, 3.18-1, 3.23-7, 4.1-5, 4.2-2, 4.2-8, 4.2-12, 4.6-25, 4.8-12, 4.9-7, 4.9-17, 4.10-3, 4.12-54, 4.13-2, 4.18-2, 4.18-26, 4.21-11, 4.22-2, 4.23-69
Air Quality	2-6, 2-77, 3.3-1, 3.3-2, 3.3-6, 3.3-8, 3.3-9, 3.3-10, 3.3-11, 3.3-12, 3.3-13, 3.3-14, 3.3-15, 3.3-16, 3.3-22, 3.4-11, 3.4-15, 3.13-92, 3.13-93, 3.18-6, 3.18-10, 3.18-19, 3.23-7, 4.3-1, 4.3-2, 4.3-3, 4.3-4, 4.3-5, 4.3-6, 4.3-8, 4.3-9, 4.3-10, 4.3-12, 4.3-13, 4.3-15, 4.3-16, 4.3-17, 4.3-18, 4.3-19, 4.3-20, 4.3-22, 4.3-24, 4.3-29, 4.3-30, 4.3-31, 4.3-32, 4.3-34, 4.3-35, 4.3-37, 4.3-42, 4.3-43, 4.3-45, 4.3-46, 4.3-51, 4.3-52, 4.3-54, 4.3-55, 4.3-59, 4.3-60, 4.3-61, 4.3-62, 4.3-63, 4.3-64, 4.3-65, 4.3-66, 4.3-67, 4.3-68, 4.3-69, 4.3-70, 4.3-73, 4.4-6, 4.4-10, 4.4-15, 4.4-18, 4.4-20, 4.4-21, 4.4-23, 4.4-25, 4.4-30, 4.4-31, 4.18-5, 4.18-13, 4.18-14, 4.18-15, 4.18-27, 4.18-28, 4.18-29, 4.18-33, 4.18-34, 4.19-2, 4.19-14, 4.20-6, 4.22-2, 4.23-8, 4.23-13, 4.23-26, 4.23-50, 4.23-55
Alluvial Aquifer	3.8-19, 3.8-24, 3.8-26, 3.8-28, 3.9-1, 3.9-6, 3.9-49, 3.9-51, 3.9-53, 3.9-59, 4.8-4, 4.8-12, 4.8-73, 4.9-60, 4.9-62, 4.9-67, 4.9-83, 4.9-93, 4.9-94, 4.9-110, 4.9-113, 4.9-126, 4.9-136
Antimony	ES-1, ES-2, ES-5, ES-25, ES-26, ES-31, 1-1, 1-2, 1-5, 1-6, 1-7, 2-6, 2-11, 2-28, 2-31, 2-110, 2-139, 2-149, 2-150, 2-155, 3.2-13, 3.2-14, 3.2-15, 3.5-22, 3.7-1, 3.9-15, 3.9-22, 3.9-23, 3.9-24, 3.9-25, 3.9-27, 3.9-33, 3.9-42, 3.9-45, 3.9-53, 3.9-54, 3.9-55, 3.9-57, 3.9-58, 3.9-59, 3.9-60, 3.10-21, 3.12-75, 3.12-91, 3.12-92, 3.12-93, 3.12-94, 3.17-15, 3.17-16, 3.17-23, 3.18-6, 3.18-11, 3.18-12, 3.18-13, 3.19-6, 4.1-7, 4.2-1, 4.2-2, 4.2-21, 4.2-23, 4.3-19, 4.3-24, 4.3-62, 4.4-8, 4.4-9, 4.4-29, 4.5-6, 4.5-9, 4.5-26, 4.5-27, 4.5-28, 4.5-49, 4.5-52, 4.7-1, 4.7-6, 4.7-8, 4.7-9, 4.7-10, 4.7-17, 4.7-21, 4.8-63, 4.9-4, 4.9-5, 4.9-6, 4.9-7, 4.9-8, 4.9-18, 4.9-21, 4.9-23, 4.9-24, 4.9-27, 4.9-33, 4.9-34, 4.9-35, 4.9-36, 4.9-45, 4.9-46, 4.9-59, 4.9-60, 4.9-62, 4.9-65, 4.9-67, 4.9-69, 4.9-70, 4.9-71, 4.9-72, 4.9-75, 4.9-76, 4.9-77, 4.9-78, 4.9-85, 4.9-94, 4.9-97, 4.9-98, 4.9-101, 4.9-102, 4.9-103, 4.9-109, 4.9-110, 4.9-113, 4.9-114, 4.9-122, 4.9-123, 4.9-124, 4.9-125, 4.9-126, 4.9-128, 4.9-133, 4.9-134, 4.9-135, 4.9-136, 4.9-139, 4.9-140, 4.9-141, 4.9-143, 4.9-145, 4.11-57, 4.12-21, 4.12-22, 4.12-39, 4.12-40, 4.12-

Access Roads (continued)	43, 4.12-44, 4.12-45, 4.12-46, 4.12-47, 4.12-48, 4.12-49, 4.12-50, 4.12-104, 4.12-137, 4.12-192, 4.12-202, 4.13-86, 4.16-8, 4.16-9, 4.16-13, 4.16-14, 4.16-28, 4.16-31, 4.18-15, 4.18-17, 4.18-18, 4.18-19, 4.18-33, 4.18-34, 4.18-35, 4.19-61, 4.20-22, 4.21-22, 4.23-41, 4.23-57, 4.23-58
Aquatic Species	ES-29, ES-30, 2-7, 2-153, 2-154, 3.4-12, 3.11-14, 3.11-28, 4.4-11, 4.4-13, 4.4-20, 4.4-22, 4.12-1, 4.12-49, 4.12-94, 4.12-137, 4.12-183, 4.12-192, 4.12-201, 4.12-202, 4.23-19, 4.23-23, 4.23-24, 4.23-48, 4.23-50, 4.23-57, 4.23-60, 4.24-10
Arsenic	ES-25, ES-31, 2ES-5, ES-26, ES-31, 2-110, 2-149, 2-155, 2-149, 2-150, 2-155, 3.2-14, 3.5-22, 3.9-22, 3.9-24, 3.9-25, 3.9-42, 3.9-45, 3.9-53, 3.9-54, 3.9-58, 3.9-59, 3.9-60, 3.9-15, 3.9-22, 3.9-26, 3.9-27, 3.9-33, 3.9-45, 3.9-54, 3.9-56, 3.9-59, 3.10-21, 3.12-75, 3.12-91, 3.12-93, 3.12-94, 3.12-92, 3.12-93, 3.18-6, 3.18-11, 3.18-12, 3.18-13, 3.18-12, 4.1-8, 4.5-6, 4.5-9, 4.5-10, 4.5-26, 4.5-27, 4.5-28, 4.5-49, 4.5-52, 4.5-27, 4.9-4, 4.9-5, 4.9-7, 4.9-18, 4.9-24, 4.9-27, 4.9-28, 4.9-33, 4.9-34, 4.9-36, 4.9-45, 4.9-46, 4.9-52, 4.9-59, 4.9-60, 4.9-62, 4.9-65, 4.9-67, 4.9-69, 4.9-70, 4.9-71, 4.9-72, 4.9-75, 4.9-76, 4.9-78, 4.9-85, 4.9-93, 4.9-94, 4.9-97, 4.9-98, 4.9-101, 4.9-102, 4.9-109, 4.9-113, 4.9-114, 4.9-119, 4.9-123, 4.9-124, 4.9-125, 4.9-126, 4.9-128, 4.9-129, 4.9-130, 4.9-132, 4.9-133, 4.9-134, 4.9-135, 4.9-136, 4.9-139, 4.9-143, 4.9-145, 4.9-146, 4.9-18, 4.9-21, 4.9-24, 4.9-27, 4.9-29, 4.9-31, 4.9-35, 4.9-36, 4.9-46, 4.9-51, 4.9-60, 4.9-66, 4.9-76, 4.9-77, 4.9-85, 4.9-94, 4.9-98, 4.9-103, 4.9-113, 4.9-120, 4.9-131, 4.9-133, 4.9-140, 4.9-141, 4.11-57, 4.12-39, 4.12-40, 4.12-44, 4.12-45, 4.12-46, 4.12-47, 4.12-48, 4.12-49, 4.12-50, 4.12-104, 4.12-137, 4.12-138, 4.12-202, 4.12-43, 4.12-49, 4.12-203, 4.13-86, 4.18-15, 4.18-17, 4.18-18, 4.18-19, 4.18-33, 4.18-34, 4.18-35, 4.18-18, 4.18-19, 4.23-57, 4.23-58
Baseline	ES-1, ES-9, ES-21, ES-23, ES-26, ES-28, ES-29, ES-30, ES-31, ES-32, ES-33, 2-3, 2-79, 2-123, 2-147, 2-150, 2-152, 2-153, 2-154, 2-155, 2-156, 2-157, 3.2-32, 3.3-9, 3.3-14, 3.3-15, 3.3-16, 3.3-38, 3.4-2, 3.4-5, 3.5-9, 3.5-16, 3.5-18, 3.6-2, 3.6-7, 3.6-8, 3.6-9, 3.7-7, 3.7-10, 3.7-12, 3.8-3, 3.8-4, 3.8-13, 3.8-14, 3.8-17, 3.8-20, 3.8-21, 3.9-5, 3.9-6, 3.9-11, 3.9-13, 3.9-17, 3.9-18, 3.9-22, 3.9-24, 3.9-25, 3.9-27, 3.9-31, 3.9-32, 3.9-35, 3.9-41, 3.9-42, 3.9-43, 3.9-44, 3.9-45, 3.9-49, 3.9-52, 3.9-53, 3.9-54, 3.9-58, 3.9-59, 3.9-60, 3.11-3, 3.11-19, 3.12-1, 3.12-9, 3.12-10, 3.12-11, 3.12-15, 3.12-22, 3.12-23, 3.12-35, 3.12-36, 3.12-40, 3.12-42, 3.12-43, 3.12-50, 3.12-56, 3.12-57, 3.12-62, 3.12-63, 3.12-64, 3.12-65, 3.12-75, 3.12-76, 3.12-77, 3.12-78, 3.12-81, 3.12-82, 3.12-85, 3.12-87, 3.12-89, 3.12-90, 3.12-91, 3.12-92, 3.12-98, 3.13-1, 3.13-5, 3.13-7, 3.13-21, 3.13-25, 3.13-26, 3.13-92, 3.16-6, 3.16-12, 3.18-2, 3.18-3, 3.18-10, 3.18-11, 3.18-12, 3.18-13, 3.18-14, 3.18-17, 3.18-19, 3.23-18, 3.23-21, 3.23-45, 4.1-2, 4.1-6, 4.1-9, 4.2-23, 4.3-10, 4.3-13, 4.3-28, 4.3-31, 4.3-32, 4.3-52, 4.3-53, 4.3-54, 4.3-64, 4.3-66, 4.3-69, 4.3-70, 4.3-73, 4.4-4, 4.4-24, 4.4-30, 4.4-31, 4.5-51, 4.6-1, 4.6-3, 4.6-17, 4.6-18, 4.6-19, 4.6-25, 4.6-29, 4.6-30, 4.6-36, 4.6-38, 4.6-40, 4.6-42, 4.6-43, 4.6-45, 4.6-46, 4.6-48, 4.6-49, 4.6-52, 4.6-55, 4.7-21, 4.7-22, 4.8-44, 4.8-62, 4.8-64, 4.8-67, 4.8-69, 4.9-2, 4.9-3, 4.9-4, 4.9-6, 4.9-7, 4.9-9, 4.9-23, 4.9-24, 4.9-28, 4.9-36, 4.9-38, 4.9-41, 4.9-42, 4.9-44, 4.9-45, 4.9-46, 4.9-60, 4.9-62, 4.9-65, 4.9-70, 4.9-72, 4.9-76, 4.9-78, 4.9-79, 4.9-84, 4.9-85, 4.9-93, 4.9-98, 4.9-101, 4.9-102, 4.9-108, 4.9-109, 4.9-113, 4.9-123, 4.9-128, 4.9-129, 4.9-130, 4.9-133, 4.9-134, 4.9-136, 4.9-139, 4.9-141,

Baseline (continued)	4.10-3, 4.10-57, 4.11-3, 4.11-51, 4.11-71, 4.11-72, 4.12-3, 4.12-11, 4.12-12, 4.12-13, 4.12-14, 4.12-24, 4.12-25, 4.12-26, 4.12-27, 4.12-28, 4.12-29, 4.12-30, 4.12-33, 4.12-39, 4.12-41, 4.12-42, 4.12-43, 4.12-44, 4.12-46, 4.12-47, 4.12-48, 4.12-50, 4.12-51, 4.12-54, 4.12-55, 4.12-56, 4.12-57, 4.12-58, 4.12-60, 4.12-62, 4.12-63, 4.12-64, 4.12-65, 4.12-66, 4.12-67, 4.12-68, 4.12-69, 4.12-70, 4.12-71, 4.12-72, 4.12-73, 4.12-74, 4.12-75, 4.12-76, 4.12-77, 4.12-78, 4.12-82, 4.12-83, 4.12-85, 4.12-86, 4.12-87, 4.12-88, 4.12-92, 4.12-93, 4.12-101, 4.12-102, 4.12-103, 4.12-104, 4.12-105, 4.12-106, 4.12-109, 4.12-110, 4.12-111, 4.12-112, 4.12-113, 4.12-114, 4.12-115, 4.12-116, 4.12-117, 4.12-118, 4.12-119, 4.12-120, 4.12-121, 4.12-122, 4.12-123, 4.12-124, 4.12-125, 4.12-127, 4.12-128, 4.12-129, 4.12-131, 4.12-132, 4.12-133, 4.12-135, 4.12-136, 4.12-138, 4.12-139, 4.12-145, 4.12-146, 4.12-147, 4.12-148, 4.12-149, 4.12-153, 4.12-156, 4.12-157, 4.12-158, 4.12-159, 4.12-160, 4.12-161, 4.12-162, 4.12-163, 4.12-164, 4.12-165, 4.12-166, 4.12-167, 4.12-168, 4.12-169, 4.12-170, 4.12-171, 4.12-172, 4.12-175, 4.12-176, 4.12-177, 4.12-178, 4.12-179, 4.12-181, 4.12-182, 4.12-185, 4.12-186, 4.12-187, 4.12-191, 4.12-196, 4.12-201, 4.12-202, 4.12-203, 4.13-10, 4.13-16, 4.13-20, 4.13-86, 4.13-115, 4.13-116, 4.14-21, 4.15-27, 4.16-10, 4.16-31, 4.16-32, 4.17-23, 4.17-24, 4.18-1, 4.18-19, 4.18-22, 4.18-30, 4.18-33, 4.18-34, 4.18-33, 4.18-34, 4.18-35, 4.18-34, 4.18-35, 4.19-6, 4.19-71, 4.20-55, 4.21-1, 4.21-53, 4.21-54, 4.21-55, 4.21-56, 4.22-17, 4.23-85, 4.24-3, 4.24-4, 4.24-11, 4.24-12, 5-4
Bedrock Aquifer	3.8-23, 3.8-25, 3.9-1, 3.9-6, 3.9-49, 3.9-51, 3.9-53, 3.9-54, 3.9-59, 4.1-3, 4.8-41, 4.8-74, 4.8-77, 4.9-33, 4.9-62, 4.9-113
Best Management Practice	2-19, 2-43, 2-47, 2-110, 3.5-3, 4.1-10, 4.1-11, 4.3-63, 4.4-30, 4.5-8, 4.5-25, 4.5-27, 4.5-43, 4.7-3, 4.8-64, 4.9-48, 4.9-49, 4.9-54, 4.9-56, 4.9-57, 4.9-90, 4.9-91, 4.9-117, 4.9-121, 4.9-122, 4.10-6, 4.10-42, 4.11-12, 4.12-14, 4.12-19, 4.12-31, 4.12-32, 4.12-192, 4.13-41, 4.13-53, 4.13-84, 4.23-29, 4.23-32, 4.23-33, 4.23-35, 4.23-38, 4.23-40, 4.23-87
Boise National Forest	ES-6, ES-8, ES-13, ES-14, ES-17, ES-18, 1-2, 1-6, 1-8, 1-9, 2-11, 2-12, 2-58, 2-91, 2-116, 2-123, 2-133, 2-145, 2-146, 3.1-1, 3.1-2, 3.2-3, 3.3-13, 3.4-3, 3.5-1, 3.5-3, 3.5-21, 3.6-6, 3.6-9, 3.6-10, 3.7-6, 3.8-6, 3.9-17, 3.10-1, 3.10-6, 3.10-8, 3.10-9, 3.10-15, 3.10-16, 3.10-17, 3.10-19, 3.10-21, 3.10-23, 3.10-25, 3.10-27, 3.10-28, 3.10-29, 3.10-37, 3.10-38, 3.11-1, 3.11-3, 3.12-8, 3.12-15, 3.12-63, 3.12-75, 3.13-1, 3.13-5, 3.13-6, 3.13-7, 3.13-15, 3.13-16, 3.13-19, 3.13-20, 3.13-21, 3.13-22, 3.13-24, 3.13-26, 3.13-27, 3.13-31, 3.13-42, 3.13-46, 3.13-54, 3.13-61, 3.13-65, 3.13-69, 3.13-77, 3.13-81, 3.13-82, 3.13-87, 3.13-88, 3.13-89, 3.13-90, 3.14-1, 3.14-5, 3.14-7, 3.14-8, 3.14-9, 3.14-15, 3.14-17, 3.14-18, 3.14-21, 3.14-22, 3.14-23, 3.15-1, 3.15-5, 3.15-8, 3.15-11, 3.16-1, 3.16-2, 3.16-5, 3.16-6, 3.16-9, 3.16-10, 3.17-10, 3.17-17, 3.18-1, 3.18-4, 3.19-1, 3.19-3, 3.19-5, 3.19-6, 3.19-7, 3.19-8, 3.19-9, 3.19-11, 3.19-12, 3.19-13, 3.19-14, 3.20-5, 3.20-7, 3.20-9, 3.20-10, 3.21-2, 3.21-12, 3.21-13, 3.21-18, 3.21-21, 3.21-22, 3.23-1, 3.23-5, 3.23-6, 3.23-8, 3.23-13, 3.23-15, 3.23-16, 3.23-17, 3.23-22, 3.23-26, 3.23-27, 3.23-31, 3.23-32, 3.23-45, 3.24-7, 3.24-14, 4.1-17, 4.1-18, 4.1-19, 4.1-20, 4.2-4, 4.3-63, 4.4-25, 4.5-1, 4.5-2, 4.5-3, 4.5-7, 4.5-15, 4.5-16, 4.5-18, 4.5-19, 4.5-30, 4.5-37, 4.5-41, 4.5-42, 4.5-46, 4.5-51, 4.6-13, 4.6-16, 4.6-26, 4.6-28, 4.6-34, 4.6-36, 4.6-38, 4.6-40, 4.6-42, 4.6-44, 4.6-45, 4.6-47, 4.6-48, 4.6-49, 4.10-2, 4.10-3, 4.10-4, 4.10-8, 4.10-9, 4.10-15, 4.10-16, 4.10-17,

Boise National Forest (continued)	4.10-37, 4.10-38, 4.10-57, 4.10-58, 4.12-2, 4.12-193, 4.13-2, 4.13-5, 4.13-6, 4.13-16, 4.13-71, 4.13-73, 4.13-81, 4.13-85, 4.13-89, 4.13-108, 4.14-2, 4.14-3, 4.14-5, 4.14-6, 4.14-13, 4.14-16, 4.14-17, 4.14-21, 4.15-2, 4.15-5, 4.15-6, 4.15-9, 4.15-13, 4.15-14, 4.15-18, 4.15-23, 4.15-27, 4.16-1, 4.16-2, 4.16-7, 4.16-23, 4.17-2, 4.17-8, 4.17-14, 4.18-29, 4.19-1, 4.19-3, 4.19-5, 4.19-10, 4.19-18, 4.19-29, 4.19-34, 4.19-63, 4.20-4, 4.20-10, 4.20-30, 4.20-34, 4.20-38, 4.20-49, 4.20-50, 4.21-18, 4.21-47, 4.22-4, 4.22-17, 4.23-6, 4.23-18, 4.23-22, 4.23-23, 4.23-24, 4.23-41, 4.23-45, 4.23-48, 4.23-78, 4.23-79, 4.24-2, 4.24-6, 5-5
Bull Trout	ES-7, ES-29, ES-30, ES-32, 1-11, 2-71, 2-82, 2-153, 2-154, 2-156, 3.4-14, 3.9-32, 3.11-17, 3.11-18, 3.11-27, 3.12-1, 3.12-9, 3.12-11, 3.12-15, 3.12-37, 3.12-41, 3.12-42, 3.12-43, 3.12-44, 3.12-45, 3.12-47, 3.12-48, 3.12-49, 3.12-50, 3.12-51, 3.12-55, 3.12-56, 3.12-59, 3.12-62, 3.12-65, 3.12-66, 3.12-67, 3.12-68, 3.12-69, 3.12-70, 3.12-71, 3.12-72, 3.12-76, 3.12-77, 3.12-81, 3.12-82, 3.12-83, 3.12-84, 3.12-90, 3.12-97, 3.12-100, 3.12-101, 3.23-18, 3.23-21, 3.23-22, 3.23-46, 3.24-13, 3.24-14, 4.4-13, 4.12-1, 4.12-2, 4.12-11, 4.12-12, 4.12-13, 4.12-14, 4.12-15, 4.12-16, 4.12-18, 4.12-20, 4.12-21, 4.12-22, 4.12-26, 4.12-28, 4.12-39, 4.12-56, 4.12-59, 4.12-66, 4.12-75, 4.12-76, 4.12-77, 4.12-78, 4.12-79, 4.12-80, 4.12-81, 4.12-82, 4.12-83, 4.12-84, 4.12-85, 4.12-86, 4.12-87, 4.12-88, 4.12-89, 4.12-93, 4.12-95, 4.12-99, 4.12-124, 4.12-125, 4.12-126, 4.12-127, 4.12-128, 4.12-129, 4.12-130, 4.12-131, 4.12-132, 4.12-133, 4.12-134, 4.12-139, 4.12-143, 4.12-144, 4.12-147, 4.12-149, 4.12-171, 4.12-172, 4.12-174, 4.12-175, 4.12-176, 4.12-177, 4.12-178, 4.12-179, 4.12-184, 4.12-185, 4.12-189, 4.12-190, 4.12-191, 4.12-196, 4.12-197, 4.12-198, 4.12-201, 4.12-203, 4.12-204, 4.19-21, 4.22-5, 4.24-4, 4.24-12
Burntlog Route	ES-9, ES-13, ES-18, ES-28, ES-31, ES-32, ES-33, ES-34, ES-35, 2-5, 2-9, 2-11, 2-19, 2-20, 2-21, 2-22, 2-31, 2-55, 2-56, 2-57, 2-69, 2-74, 2-84, 2-92, 2-93, 2-111, 2-119, 2-124, 2-126, 2-129, 2-130, 2-141, 2-142, 2-152, 2-155, 2-156, 2-157, 2-158, 2-159, 3.2-26, 3.2-27, 3.2-28, 3.2-31, 3.5-1, 3.5-9, 3.5-10, 3.5-13, 3.5-14, 3.5-19, 3.5-20, 3.6-7, 3.6-8, 3.6-9, 3.6-10, 3.7-1, 3.10-24, 3.10-27, 3.10-29, 3.10-30, 3.10-31, 3.10-32, 3.10-33, 3.10-34, 3.10-35, 3.10-36, 3.10-37, 3.11-3, 3.12-10, 3.12-41, 3.12-64, 3.13-92, 3.15-10, 3.17-17, 4.1-4, 4.1-10, 4.1-18, 4.2-11, 4.2-12, 4.2-15, 4.2-16, 4.2-17, 4.2-22, 4.3-7, 4.3-8, 4.3-11, 4.3-14, 4.3-21, 4.3-24, 4.3-27, 4.3-44, 4.3-51, 4.3-59, 4.3-60, 4.3-61, 4.3-73, 4.4-16, 4.4-18, 4.4-20, 4.4-21, 4.4-22, 4.4-23, 4.4-24, 4.4-30, 4.4-31, 4.5-5, 4.5-6, 4.5-7, 4.5-9, 4.5-11, 4.5-15, 4.5-17, 4.5-18, 4.5-22, 4.5-23, 4.5-28, 4.5-29, 4.5-30, 4.5-34, 4.5-37, 4.5-38, 4.5-41, 4.5-42, 4.5-45, 4.5-47, 4.5-52, 4.6-6, 4.6-7, 4.6-8, 4.6-11, 4.6-13, 4.6-14, 4.6-15, 4.6-16, 4.6-17, 4.6-18, 4.6-19, 4.6-23, 4.6-24, 4.6-26, 4.6-27, 4.6-28, 4.6-29, 4.6-30, 4.6-31, 4.6-34, 4.6-35, 4.6-36, 4.6-37, 4.6-38, 4.6-39, 4.6-41, 4.6-42, 4.6-43, 4.6-46, 4.6-47, 4.6-52, 4.6-55, 4.7-8, 4.7-10, 4.7-11, 4.7-12, 4.7-13, 4.7-15, 4.7-18, 4.7-19, 4.7-22, 4.9-46, 4.9-47, 4.9-48, 4.9-49, 4.9-50, 4.9-86, 4.9-87, 4.9-88, 4.9-110, 4.9-116, 4.9-117, 4.9-119, 4.9-127, 4.10-15, 4.10-16, 4.10-20, 4.10-28, 4.10-34, 4.10-43, 4.10-47, 4.10-53, 4.11-3, 4.11-4, 4.11-6, 4.11-15, 4.11-22, 4.11-25, 4.11-29, 4.11-30, 4.11-34, 4.11-39, 4.11-43, 4.11-49, 4.11-58, 4.11-63, 4.11-64, 4.11-66, 4.11-69, 4.11-72, 4.12-2, 4.12-20, 4.12-21, 4.12-22, 4.12-31, 4.12-32, 4.12-74, 4.12-86, 4.12-95, 4.12-99, 4.12-102, 4.12-140, 4.12-143, 4.12-183, 4.12-184, 4.12-185, 4.12-187, 4.12-192, 4.12-195, 4.12-199, 4.12-

Burntlog Route (continued)	<p>203, 4.12-204, 4.13-2, 4.13-3, 4.13-4, 4.13-6, 4.13-7, 4.13-8, 4.13-12, 4.13-13, 4.13-16, 4.13-17, 4.13-18, 4.13-21, 4.13-22, 4.13-23, 4.13-28, 4.13-29, 4.13-32, 4.13-35, 4.13-39, 4.13-40, 4.13-43, 4.13-44, 4.13-48, 4.13-52, 4.13-55, 4.13-56, 4.13-63, 4.13-67, 4.13-70, 4.13-71, 4.13-72, 4.13-75, 4.13-79, 4.13-80, 4.13-83, 4.13-84, 4.13-88, 4.13-92, 4.13-95, 4.13-96, 4.13-98, 4.13-99, 4.13-101, 4.13-104, 4.13-105, 4.13-109, 4.13-111, 4.13-113, 4.13-115, 4.13-116, 4.14-5, 4.14-7, 4.14-11, 4.15-3, 4.15-4, 4.15-7, 4.15-8, 4.15-10, 4.15-13, 4.15-15, 4.15-17, 4.15-19, 4.16-4, 4.16-6, 4.16-7, 4.16-8, 4.16-9, 4.16-10, 4.16-11, 4.16-12, 4.16-13, 4.16-14, 4.16-15, 4.16-16, 4.16-17, 4.16-18, 4.16-19, 4.16-21, 4.16-22, 4.16-24, 4.16-25, 4.16-26, 4.16-27, 4.16-28, 4.16-31, 4.16-32, 4.17-5, 4.17-7, 4.17-9, 4.17-10, 4.17-12, 4.17-13, 4.17-20, 4.17-23, 4.17-24, 4.18-21, 4.18-23, 4.18-26, 4.18-27, 4.18-28, 4.18-34, 4.19-6, 4.19-7, 4.19-8, 4.19-9, 4.19-10, 4.19-11, 4.19-15, 4.19-16, 4.19-17, 4.19-19, 4.19-22, 4.19-23, 4.19-24, 4.19-26, 4.19-27, 4.19-30, 4.19-31, 4.19-32, 4.19-34, 4.19-35, 4.19-36, 4.19-37, 4.19-38, 4.19-39, 4.19-40, 4.19-41, 4.19-42, 4.19-43, 4.19-46, 4.19-47, 4.19-48, 4.19-49, 4.19-50, 4.19-51, 4.19-52, 4.19-53, 4.19-55, 4.19-57, 4.19-58, 4.19-59, 4.19-60, 4.19-61, 4.19-64, 4.19-65, 4.19-67, 4.19-68, 4.19-71, 4.19-72, 4.19-73, 4.20-9, 4.20-10, 4.20-11, 4.20-12, 4.20-13, 4.20-14, 4.20-15, 4.20-16, 4.20-23, 4.20-33, 4.20-34, 4.20-35, 4.20-37, 4.20-38, 4.20-41, 4.20-42, 4.20-44, 4.20-45, 4.20-46, 4.20-47, 4.20-50, 4.20-52, 4.20-53, 4.20-55, 4.21-18, 4.21-20, 4.21-27, 4.21-35, 4.21-36, 4.21-37, 4.21-39, 4.21-41, 4.21-42, 4.21-46, 4.21-47, 4.21-51, 4.21-56, 4.22-3, 4.22-4, 4.22-5, 4.22-6, 4.22-7, 4.22-8, 4.22-9, 4.22-10, 4.22-11, 4.22-12, 4.22-15, 4.22-16, 4.22-17, 4.23-3, 4.23-4, 4.23-5, 4.23-6, 4.23-7, 4.23-9, 4.23-10, 4.23-11, 4.23-12, 4.23-13, 4.23-14, 4.23-15, 4.23-16, 4.23-18, 4.23-23, 4.23-25, 4.23-26, 4.23-27, 4.23-28, 4.23-29, 4.23-33, 4.23-34, 4.23-36, 4.23-37, 4.23-38, 4.23-39, 4.23-43, 4.23-44, 4.23-47, 4.23-48, 4.23-49, 4.23-50, 4.23-51, 4.23-52, 4.23-53, 4.23-54, 4.23-55, 4.23-56, 4.23-57, 4.23-58, 4.23-60, 4.23-63, 4.23-65, 4.23-66, 4.23-67, 4.23-69, 4.23-70, 4.23-71, 4.23-75, 4.23-76, 4.23-77, 4.23-78, 4.23-79, 4.23-84, 4.23-85, 4.23-86, 4.23-85, 4.23-86, 4.23-87, 4.23-88, 4.24-3, 4.24-4, 4.24-11, 4.24-12</p>
Chinook Salmon	<p>ES-29, ES-32, 2-39, 2-71, 2-82, 2-153, 2-156, 3.9-32, 3.11-17, 3.11-18, 3.11-27, 3.12-1, 3.12-8, 3.12-9, 3.12-11, 3.12-15, 3.12-16, 3.12-17, 3.12-18, 3.12-19, 3.12-21, 3.12-22, 3.12-23, 3.12-24, 3.12-25, 3.12-26, 3.12-27, 3.12-28, 3.12-29, 3.12-30, 3.12-32, 3.12-37, 3.12-38, 3.12-50, 3.12-59, 3.12-62, 3.12-64, 3.12-76, 3.12-77, 3.12-90, 3.12-97, 3.12-98, 3.12-100, 3.12-101, 3.17-13, 3.23-21, 3.23-46, 3.24-13, 3.24-14, 4.4-13, 4.12-1, 4.12-2, 4.12-11, 4.12-12, 4.12-13, 4.12-14, 4.12-15, 4.12-16, 4.12-17, 4.12-18, 4.12-21, 4.12-22, 4.12-23, 4.12-26, 4.12-28, 4.12-29, 4.12-39, 4.12-40, 4.12-60, 4.12-61, 4.12-62, 4.12-63, 4.12-64, 4.12-65, 4.12-66, 4.12-67, 4.12-68, 4.12-69, 4.12-73, 4.12-75, 4.12-82, 4.12-92, 4.12-93, 4.12-95, 4.12-99, 4.12-110, 4.12-111, 4.12-112, 4.12-113, 4.12-114, 4.12-115, 4.12-116, 4.12-117, 4.12-118, 4.12-121, 4.12-122, 4.12-128, 4.12-135, 4.12-137, 4.12-138, 4.12-139, 4.12-143, 4.12-144, 4.12-145, 4.12-147, 4.12-149, 4.12-157, 4.12-158, 4.12-159, 4.12-160, 4.12-161, 4.12-162, 4.12-163, 4.12-164, 4.12-165, 4.12-166, 4.12-169, 4.12-174, 4.12-181, 4.12-184, 4.12-185, 4.12-186, 4.12-187, 4.12-188, 4.12-189, 4.12-191, 4.12-196, 4.12-198, 4.12-201, 4.12-203, 4.12-204, 4.19-21, 4.21-56, 4.22-5, 4.24-4, 4.24-12, 5-2</p>

Clean Air Act	3.3-1, 3.3-6, 3.3-8, 3.3-9, 3.3-15, 3.3-16, 3.3-22, 3.3-25, 3.4-4, 3.7-6, 3.18-10, 3.23-7, 4.3-23, 4.4-9
Clean Water Act	ES-5, ES-6, ES-8, 1-7, 1-9, 2-1, 2-54, 2-59, 2-65, 2-76, 2-83, 3.7-6, 3.8-4, 3.9-12, 3.9-13, 3.9-42, 3.11-1, 3.11-11, 3.11-12, 3.11-15, 3.11-28, 3.12-7, 3.12-8, 3.12-75, 4.9-24, 4.11-4, 4.11-9, 4.11-50, 4.11-51, 4.11-52, 4.11-55, 4.18-19, 4.18-33, 4.18-35, 4.24-2, 5-4
Climate Change	3.3-11, 3.4-1, 3.4-2, 3.4-3, 3.4-5, 3.4-6, 3.4-10, 3.4-11, 3.4-12, 3.4-13, 3.4-14, 3.4-15, 3.4-16, 3.4-17, 3.10-21, 3.10-24, 3.12-42, 3.12-89, 3.12-90, 3.13-25, 4.1-6, 4.4-1, 4.4-2, 4.4-3, 4.4-4, 4.4-5, 4.4-6, 4.4-8, 4.4-9, 4.4-10, 4.4-11, 4.4-12, 4.4-13, 4.4-14, 4.4-15, 4.4-16, 4.4-17, 4.4-20, 4.4-21, 4.4-22, 4.4-23, 4.4-24, 4.4-25, 4.4-26, 4.4-27, 4.4-29, 4.4-30, 4.4-31, 4.11-11, 4.12-28, 4.12-66, 4.12-147
Closure and Reclamation	ES-2, ES-31, ES-32, ES-33, ES-35, 1-1, 1-5, 2-5, 2-9, 2-10, 2-11, 2-13, 2-17, 2-21, 2-46, 2-51, 2-55, 2-56, 2-69, 2-70, 2-74, 2-75, 2-76, 2-77, 2-78, 2-79, 2-83, 2-86, 2-87, 2-92, 2-108, 2-110, 2-112, 2-114, 2-115, 2-116, 2-120, 2-123, 2-129, 2-134, 2-136, 2-139, 2-141, 2-142, 2-155, 2-156, 2-157, 2-159, 3.1-1, 3.5-22, 3.12-7, 3.12-90, 4.1-11, 4.2-13, 4.3-60, 4.4-1, 4.4-5, 4.4-11, 4.4-12, 4.4-13, 4.4-14, 4.4-22, 4.4-29, 4.4-30, 4.4-31, 4.5-17, 4.5-18, 4.5-20, 4.6-30, 4.6-33, 4.6-39, 4.6-40, 4.6-44, 4.6-45, 4.6-46, 4.6-48, 4.6-49, 4.6-53, 4.7-1, 4.7-11, 4.7-13, 4.7-14, 4.7-15, 4.7-16, 4.7-21, 4.8-15, 4.8-20, 4.8-41, 4.8-53, 4.8-59, 4.8-61, 4.8-63, 4.9-27, 4.9-41, 4.9-42, 4.9-48, 4.9-50, 4.9-51, 4.9-54, 4.9-69, 4.9-70, 4.9-84, 4.9-87, 4.9-88, 4.9-90, 4.9-101, 4.9-119, 4.9-125, 4.9-134, 4.10-4, 4.10-5, 4.10-6, 4.10-10, 4.10-34, 4.10-47, 4.11-8, 4.11-40, 4.11-49, 4.11-53, 4.12-3, 4.12-4, 4.12-11, 4.12-13, 4.12-21, 4.12-24, 4.12-25, 4.12-26, 4.12-30, 4.12-31, 4.12-32, 4.12-47, 4.12-60, 4.12-62, 4.12-63, 4.12-65, 4.12-69, 4.12-75, 4.12-76, 4.12-94, 4.12-103, 4.12-110, 4.12-119, 4.12-123, 4.12-157, 4.12-166, 4.12-183, 4.12-194, 4.12-197, 4.12-203, 4.13-2, 4.13-3, 4.13-4, 4.13-6, 4.13-35, 4.13-48, 4.13-49, 4.13-53, 4.13-56, 4.13-63, 4.13-66, 4.13-79, 4.13-88, 4.13-107, 4.13-108, 4.14-5, 4.14-7, 4.14-10, 4.14-12, 4.14-18, 4.14-19, 4.15-3, 4.15-4, 4.15-6, 4.15-19, 4.16-1, 4.16-2, 4.16-3, 4.16-4, 4.16-7, 4.16-8, 4.16-10, 4.16-11, 4.16-12, 4.16-16, 4.16-18, 4.16-19, 4.16-21, 4.16-23, 4.16-25, 4.16-27, 4.16-28, 4.16-31, 4.16-32, 4.17-1, 4.17-2, 4.17-4, 4.17-5, 4.17-6, 4.17-9, 4.17-11, 4.17-12, 4.17-13, 4.17-16, 4.17-22, 4.18-1, 4.18-5, 4.18-6, 4.18-7, 4.18-8, 4.18-9, 4.18-10, 4.18-11, 4.18-12, 4.18-15, 4.18-16, 4.18-17, 4.18-18, 4.18-19, 4.18-20, 4.18-21, 4.18-22, 4.18-23, 4.18-24, 4.18-25, 4.18-26, 4.18-27, 4.18-28, 4.18-30, 4.18-33, 4.18-34, 4.18-35, 4.19-4, 4.19-6, 4.19-16, 4.19-19, 4.19-20, 4.19-21, 4.19-23, 4.19-24, 4.19-25, 4.19-26, 4.19-27, 4.19-28, 4.19-29, 4.19-30, 4.19-32, 4.19-38, 4.19-39, 4.19-40, 4.19-43, 4.19-44, 4.19-48, 4.19-49, 4.19-50, 4.19-53, 4.19-57, 4.19-58, 4.19-59, 4.19-61, 4.19-65, 4.19-68, 4.20-1, 4.20-4, 4.20-5, 4.20-8, 4.20-10, 4.20-15, 4.20-16, 4.20-17, 4.20-28, 4.20-30, 4.20-32, 4.20-33, 4.20-35, 4.20-37, 4.20-38, 4.20-40, 4.20-41, 4.20-42, 4.20-44, 4.20-48, 4.20-49, 4.20-52, 4.20-53, 4.21-3, 4.21-4, 4.21-11, 4.21-28, 4.21-29, 4.21-30, 4.21-31, 4.21-32, 4.21-33, 4.21-34, 4.21-35, 4.21-36, 4.21-38, 4.21-41, 4.21-46, 4.21-49, 4.21-53, 4.21-54, 4.21-55, 4.22-1, 4.22-3, 4.22-4, 4.22-5, 4.22-8, 4.22-9, 4.22-10, 4.22-11, 4.22-12, 4.22-17, 4.23-1, 4.23-3, 4.23-4, 4.23-5, 4.23-6, 4.23-7, 4.23-9, 4.23-10, 4.23-11, 4.23-14, 4.23-16, 4.23-17, 4.23-18, 4.23-19, 4.23-27, 4.23-28, 4.23-38, 4.23-39, 4.23-41, 4.23-43, 4.23-47, 4.23-48, 4.23-49, 4.23-50, 4.23-51, 4.23-52, 4.23-55, 4.23-56, 4.23-58, 4.23-59, 4.23-61, 4.23-63, 4.23-

Closure and Reclamation	68, 4.23-76, 4.23-78, 4.23-79, 4.23-81, 4.23-86, 4.24-4, 4.24-7, 4.24-10, 4.24-12
Construction Phase	ES-31, 2-17, 2-19, 2-24, 2-55, 2-92, 2-124, 2-134, 2-155, 4.3-20, 4.3-21, 4.3-25, 4.3-58, 4.3-59, 4.3-60, 4.3-61, 4.4-21, 4.4-23, 4.5-17, 4.5-20, 4.6-3, 4.6-4, 4.6-5, 4.6-6, 4.6-7, 4.6-8, 4.6-9, 4.6-10, 4.6-11, 4.6-12, 4.6-13, 4.6-14, 4.6-15, 4.6-16, 4.6-17, 4.6-18, 4.6-19, 4.6-22, 4.6-24, 4.6-29, 4.6-30, 4.6-32, 4.6-35, 4.6-36, 4.6-41, 4.6-42, 4.6-46, 4.6-48, 4.7-8, 4.7-11, 4.9-48, 4.10-29, 4.10-34, 4.12-31, 4.12-187, 4.12-203, 4.13-3, 4.14-5, 4.17-4, 4.17-5, 4.17-8, 4.17-9, 4.17-12, 4.18-5, 4.18-6, 4.18-7, 4.18-8, 4.18-9, 4.18-10, 4.18-11, 4.18-12, 4.18-26, 4.20-21, 4.21-5, 4.21-6, 4.21-8, 4.21-10, 4.21-15, 4.21-18, 4.21-19, 4.21-20, 4.21-21, 4.21-23, 4.21-27, 4.21-37, 4.21-42, 4.21-44, 4.21-45, 4.22-1, 4.22-7, 4.22-9, 4.22-10, 4.22-14, 4.23-17, 4.23-20, 4.23-59
Consultation and Coordination	3.7-2, 5-1, 5-6
Critical Habitat	ES-29, ES-30, ES-32, 2-153, 2-154, 2-156, 3.10-1, 3.10-23, 3.11-23, 3.11-24, 3.11-25, 3.11-26, 3.11-27, 3.12-7, 3.12-11, 3.12-16, 3.12-17, 3.12-19, 3.12-21, 3.12-32, 3.12-33, 3.12-41, 3.12-45, 3.13-13, 3.13-21, 3.13-26, 3.23-46, 3.24-13, 4.12-1, 4.12-2, 4.12-11, 4.12-12, 4.12-13, 4.12-14, 4.12-21, 4.12-22, 4.12-39, 4.12-56, 4.12-60, 4.12-67, 4.12-68, 4.12-69, 4.12-70, 4.12-74, 4.12-75, 4.12-84, 4.12-86, 4.12-87, 4.12-99, 4.12-117, 4.12-118, 4.12-123, 4.12-124, 4.12-130, 4.12-131, 4.12-132, 4.12-143, 4.12-149, 4.12-164, 4.12-166, 4.12-170, 4.12-171, 4.12-176, 4.12-177, 4.12-178, 4.12-185, 4.12-186, 4.12-187, 4.12-188, 4.12-189, 4.12-190, 4.12-191, 4.12-198, 4.12-201, 4.12-202, 4.12-204, 4.13-5, 5-2
Cultural Resources	1-2, 2-65, 2-77, 2-84, 2-130, 3.4-15, 3.17-1, 3.17-3, 3.17-4, 3.17-5, 3.17-6, 3.17-7, 3.17-8, 3.17-9, 3.17-10, 3.17-11, 3.17-17, 3.17-24, 3.21-13, 3.23-5, 3.24-1, 3.24-2, 3.24-7, 3.24-14, 4.3-67, 4.4-15, 4.4-20, 4.4-22, 4.4-23, 4.17-1, 4.17-2, 4.17-3, 4.17-4, 4.17-5, 4.17-6, 4.17-7, 4.17-8, 4.17-9, 4.17-10, 4.17-11, 4.17-12, 4.17-13, 4.17-14, 4.17-16, 4.17-17, 4.17-18, 4.17-19, 4.17-20, 4.17-22, 4.17-23, 4.17-24, 4.21-43, 4.21-46, 4.22-1, 4.22-16, 4.23-32, 4.24-5, 4.24-10, 5-5
Cumulative Impacts	4.1-6, 4.1-7, 4.3-63, 4.6-50, 4.10-45, 4.10-46, 4.11-57, 4.12-193, 4.12-195, 4.12-196, 4.13-108, 4.13-109, 4.14-13, 4.15-22, 4.17-16, 4.18-4, 4.18-31, 4.20-50, 4.22-13, 4.22-14, 4.22-15, 4.23-43, 4.24-6, 4.24-8
Development Rock Storage Facility	ES-17, ES-23, ES-24, ES-26, ES-28, ES-29, ES-32, ES-34, ES-35, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-9, 2-10, 2-19, 2-21, 2-25, 2-26, 2-27, 2-34, 2-35, 2-39, 2-40, 2-41, 2-43, 2-47, 2-53, 2-54, 2-55, 2-69, 2-70, 2-71, 2-72, 2-73, 2-75, 2-85, 2-86, 2-102, 2-104, 2-105, 2-108, 2-112, 2-114, 2-115, 2-119, 2-120, 2-124, 2-125, 2-126, 2-129, 2-143, 2-144, 2-145, 2-147, 2-148, 2-150, 2-152, 2-153, 2-156, 2-158, 2-159, 3.2-24, 3.2-25, 3.2-36, 3.2-37, 3.9-51, 3.9-52, 3.9-53, 3.10-26, 3.10-29, 3.11-3, 3.11-20, 3.11-23, 3.12-60, 3.12-61, 3.12-80, 4.1-3, 4.1-4, 4.2-2, 4.2-4, 4.2-5, 4.2-6, 4.2-7, 4.2-8, 4.2-9, 4.2-14, 4.2-16, 4.2-20, 4.2-21, 4.2-22, 4.2-23, 4.3-8, 4.3-42, 4.3-44, 4.3-58, 4.3-59, 4.3-73, 4.4-21, 4.5-10, 4.5-22, 4.5-23, 4.5-29, 4.5-33, 4.5-47, 4.8-30, 4.8-38, 4.8-39, 4.8-41, 4.8-44, 4.8-48, 4.8-54, 4.8-60, 4.8-61, 4.8-62, 4.8-67, 4.8-68, 4.8-69, 4.9-5, 4.9-8, 4.9-9, 4.9-10, 4.9-11, 4.9-12, 4.9-17, 4.9-28, 4.9-33, 4.9-36, 4.9-60, 4.9-62, 4.9-65, 4.9-68, 4.9-71, 4.9-72, 4.9-78, 4.9-84, 4.9-92, 4.9-93, 4.9-97, 4.9-98, 4.9-101, 4.9-



Development Rock Storage Facility (continued)	107, 4.9-108, 4.9-113, 4.9-114, 4.9-129, 4.9-133, 4.9-134, 4.9-136, 4.9-139, 4.9-141, 4.9-144, 4.9-145, 4.9-146, 4.10-14, 4.10-15, 4.10-28, 4.10-37, 4.10-47, 4.10-52, 4.11-6, 4.11-13, 4.11-14, 4.11-23, 4.11-24, 4.11-30, 4.11-31, 4.11-32, 4.11-33, 4.11-35, 4.11-40, 4.11-41, 4.11-42, 4.11-52, 4.11-58, 4.11-59, 4.11-60, 4.11-61, 4.11-62, 4.11-66, 4.11-69, 4.11-71, 4.12-7, 4.12-8, 4.12-9, 4.12-11, 4.12-12, 4.12-13, 4.12-17, 4.12-38, 4.12-39, 4.12-47, 4.12-54, 4.12-63, 4.12-65, 4.12-67, 4.12-68, 4.12-69, 4.12-75, 4.12-76, 4.12-77, 4.12-81, 4.12-84, 4.12-85, 4.12-86, 4.12-87, 4.12-88, 4.12-91, 4.12-94, 4.12-95, 4.12-96, 4.12-102, 4.12-103, 4.12-104, 4.12-112, 4.12-117, 4.12-118, 4.12-121, 4.12-123, 4.12-124, 4.12-125, 4.12-126, 4.12-127, 4.12-130, 4.12-131, 4.12-132, 4.12-133, 4.12-134, 4.12-136, 4.12-137, 4.12-138, 4.12-139, 4.12-140, 4.12-143, 4.12-145, 4.12-147, 4.12-148, 4.12-149, 4.12-156, 4.12-160, 4.12-162, 4.12-164, 4.12-165, 4.12-166, 4.12-168, 4.12-169, 4.12-171, 4.12-172, 4.12-174, 4.12-176, 4.12-177, 4.12-178, 4.12-179, 4.12-180, 4.12-182, 4.12-186, 4.12-187, 4.12-188, 4.12-189, 4.12-190, 4.12-191, 4.12-192, 4.12-195, 4.12-197, 4.12-198, 4.12-201, 4.12-203, 4.13-4, 4.13-6, 4.13-16, 4.13-21, 4.13-28, 4.13-32, 4.13-43, 4.13-63, 4.13-67, 4.14-5, 4.14-7, 4.14-10, 4.15-13, 4.15-14, 4.17-11, 4.17-20, 4.17-22, 4.17-23, 4.19-49, 4.19-50, 4.20-4, 4.20-7, 4.20-30, 4.20-31, 4.20-32, 4.20-33, 4.20-38, 4.20-40, 4.20-41, 4.20-43, 4.20-51, 4.20-55, 4.21-39, 4.23-15, 4.23-16, 4.23-49, 4.23-50, 4.23-51, 4.23-52, 4.23-54, 4.23-55, 4.23-57, 4.23-58, 4.23-59, 4.23-61, 4.23-62, 4.23-66, 4.24-3, 4.24-11
Dewatering	ES-23, 2-4, 2-8, 2-25, 2-31, 2-43, 2-47, 2-48, 2-52, 2-53, 2-65, 2-86, 2-108, 2-110, 2-114, 2-147, 3.8-1, 3.12-42, 4.1-3, 4.2-7, 4.4-12, 4.8-10, 4.8-13, 4.8-14, 4.8-15, 4.8-19, 4.8-20, 4.8-25, 4.8-26, 4.8-27, 4.8-28, 4.8-29, 4.8-30, 4.8-40, 4.8-41, 4.8-44, 4.8-46, 4.8-50, 4.8-53, 4.8-58, 4.8-59, 4.8-62, 4.8-63, 4.8-67, 4.8-68, 4.8-69, 4.8-76, 4.9-1, 4.9-6, 4.9-16, 4.9-23, 4.9-24, 4.9-37, 4.9-41, 4.9-58, 4.9-67, 4.9-68, 4.9-69, 4.9-78, 4.9-80, 4.9-83, 4.9-98, 4.9-104, 4.9-113, 4.9-114, 4.9-134, 4.11-1, 4.11-54, 4.11-56, 4.12-11, 4.12-14, 4.12-15, 4.12-16, 4.12-20, 4.12-23, 4.12-26, 4.12-30, 4.12-46, 4.12-54, 4.12-66, 4.12-77, 4.12-87, 4.12-88, 4.12-94, 4.12-100, 4.12-104, 4.12-109, 4.12-113, 4.12-125, 4.12-139, 4.12-143, 4.12-148, 4.12-184, 4.12-185
Direct Effect	4.1-5, 4.2-21, 4.3-12, 4.4-1, 4.4-6, 4.4-14, 4.4-25, 4.5-45, 4.6-17, 4.6-19, 4.6-28, 4.10-41, 4.10-46, 4.11-22, 4.11-57, 4.12-2, 4.12-14, 4.12-23, 4.12-68, 4.12-75, 4.12-86, 4.12-93, 4.12-99, 4.12-117, 4.12-123, 4.12-131, 4.12-136, 4.12-143, 4.12-184, 4.12-187, 4.12-188, 4.12-189, 4.12-190, 4.12-192, 4.12-193, 4.13-5, 4.13-7, 4.13-20, 4.13-91, 4.13-92, 4.13-93, 4.13-97, 4.13-98, 4.13-100, 4.14-1, 4.14-4, 4.15-4, 4.15-6, 4.15-10, 4.15-12, 4.15-15, 4.15-16, 4.15-19, 4.15-24, 4.16-24, 4.17-4, 4.17-5, 4.17-6, 4.17-8, 4.18-26, 4.22-17, 4.23-46, 4.23-62, 4.24-4
Diversion	ES-23, ES-24, ES-29, 2-7, 2-9, 2-19, 2-38, 2-39, 2-40, 2-43, 2-44, 2-46, 2-69, 2-70, 2-85, 2-86, 2-104, 2-108, 2-114, 2-115, 2-120, 2-125, 2-126, 2-130, 2-135, 2-145, 2-147, 2-148, 2-153, 3.7-14, 3.8-1, 3.8-8, 3.8-9, 3.8-30, 3.8-32, 3.8-33, 3.9-18, 3.10-26, 3.10-29, 3.11-22, 3.11-25, 3.12-42, 3.12-77, 4.1-8, 4.3-58, 4.4-20, 4.4-21, 4.4-23, 4.4-24, 4.8-2, 4.8-13, 4.8-14, 4.8-15, 4.8-16, 4.8-20, 4.8-21, 4.8-46, 4.8-47, 4.8-48, 4.8-49, 4.8-53, 4.8-54, 4.8-55, 4.8-59, 4.8-61, 4.8-67, 4.8-68, 4.8-69, 4.8-70, 4.9-7, 4.9-75, 4.9-78, 4.9-104, 4.9-115, 4.9-132, 4.10-14, 4.10-15, 4.10-37, 4.11-6, 4.11-13, 4.11-14, 4.11-21, 4.11-

Diversion (continued)	23, 4.11-24, 4.11-31, 4.11-32, 4.11-40, 4.11-41, 4.11-60, 4.11-61, 4.11-62, 4.12-7, 4.12-9, 4.12-10, 4.12-11, 4.12-13, 4.12-15, 4.12-38, 4.12-39, 4.12-63, 4.12-65, 4.12-68, 4.12-69, 4.12-73, 4.12-75, 4.12-76, 4.12-77, 4.12-81, 4.12-84, 4.12-86, 4.12-87, 4.12-88, 4.12-91, 4.12-94, 4.12-95, 4.12-96, 4.12-102, 4.12-117, 4.12-118, 4.12-121, 4.12-123, 4.12-124, 4.12-125, 4.12-130, 4.12-131, 4.12-132, 4.12-133, 4.12-137, 4.12-138, 4.12-140, 4.12-160, 4.12-165, 4.12-169, 4.12-171, 4.12-174, 4.12-177, 4.12-178, 4.12-180, 4.12-182, 4.12-183, 4.12-184, 4.12-186, 4.12-187, 4.12-188, 4.12-189, 4.12-190, 4.12-191, 4.12-192, 4.12-201, 4.14-7, 4.15-21, 4.15-22, 4.23-32, 4.23-33, 4.23-50
Drawdown	ES-28, 2-152, 3.8-26, 4.1-3, 4.8-13, 4.8-15, 4.8-25, 4.8-28, 4.8-29, 4.8-30, 4.8-31, 4.8-32, 4.8-33, 4.8-34, 4.8-35, 4.8-36, 4.8-37, 4.8-38, 4.8-40, 4.8-41, 4.11-2, 4.11-11, 4.11-21, 4.11-29, 4.11-30, 4.11-39, 4.11-49, 4.11-68, 4.11-71
Earthquake	3.2-3, 3.2-13, 3.2-17, 3.2-19, 3.2-20, 3.2-21, 4.2-2, 4.2-3, 4.2-5, 4.2-6, 4.2-8, 4.2-10, 4.2-11, 4.2-13, 4.2-14, 4.2-16, 4.2-22
Employment	3.4-16, 3.18-8, 3.18-14, 3.18-19, 3.21-10, 3.21-11, 3.21-12, 3.21-17, 4.2-13, 4.18-8, 4.18-9, 4.18-21, 4.18-22, 4.18-30, 4.18-31, 4.21-1, 4.21-2, 4.21-3, 4.21-4, 4.21-5, 4.21-7, 4.21-8, 4.21-9, 4.21-10, 4.21-11, 4.21-12, 4.21-14, 4.21-19, 4.21-21, 4.21-22, 4.21-23, 4.21-24, 4.21-25, 4.21-28, 4.21-29, 4.21-30, 4.21-31, 4.21-32, 4.21-33, 4.21-36, 4.21-39, 4.21-43, 4.21-50, 4.21-51, 4.21-53, 4.21-54, 4.21-55
Endangered Species Act	1-9, 2-65, 2-82, 3.4-13, 3.10-1, 3.10-2, 3.10-8, 3.10-22, 3.10-23, 3.11-29, 3.11-30, 3.12-1, 3.12-7, 3.12-15, 3.12-31, 3.12-50, 3.12-51, 3.13-1, 3.13-13, 3.13-14, 3.13-18, 3.13-20, 3.13-21, 3.13-24, 3.13-81, 4.4-22, 4.10-4, 4.10-15, 4.10-16, 4.10-37, 4.10-38, 4.10-43, 4.10-46, 4.11-5, 4.11-6, 4.11-26, 4.11-35, 4.12-2, 4.12-11, 4.12-69, 4.12-75, 4.12-87, 4.12-93, 4.12-94, 4.12-118, 4.12-124, 4.12-132, 4.12-137, 4.12-166, 4.12-171, 4.12-178, 4.12-182, 4.12-187, 4.12-189, 4.12-191, 4.12-192, 4.13-5, 4.13-12, 4.13-15, 4.13-25, 4.13-27, 4.13-31, 4.13-33, 4.13-43, 4.13-46, 4.13-51, 4.13-55, 4.13-59, 4.13-70, 4.13-72, 4.13-74, 4.13-79, 4.13-82, 4.13-85, 4.13-91, 4.13-108, 5-2, 5-6
Energy	ES-1, 1-2, 1-6, 2-19, 2-39, 2-40, 2-46, 2-70, 2-73, 3.4-2, 3.4-4, 3.4-5, 3.4-6, 3.4-9, 3.6-1, 3.6-2, 3.11-29, 3.15-6, 3.21-12, 4.3-67, 4.4-8, 4.4-9, 4.4-10, 4.4-26, 4.6-17, 4.7-4, 4.9-83, 4.11-7, 4.11-9, 4.12-12, 4.13-100, 5-1
Environmental Consequences	ES-21, 1-9, 2-1, 2-37, 2-81, 2-82, 2-146, 3.4-3, 3.5-1, 3.5-20, 3.9-5, 3.9-11, 3.10-1, 3.10-9, 3.11-2, 3.11-11, 3.11-20, 3.12-50, 3.12-57, 3.12-58, 3.12-63, 3.12-85, 3.13-1, 3.15-1, 3.18-4, 3.23-14, 4.1-1, 4.1-2, 4.4-2, 4.19-2
Environmental Justice	3.4-17, 3.21-1, 4.1-4, 4.4-16, 4.4-20, 4.4-22, 4.4-23, 4.16-3, 4.22-1, 4.22-2, 4.22-5, 4.22-6, 4.22-8, 4.22-10, 4.22-11, 4.22-12, 4.22-13, 4.22-16, 4.22-17, 4.24-5
Environmental Protection	ES-1, 1-2, 1-9, 1-10, 2-63, 3.3-1, 3.4-1, 3.4-4, 3.5-2, 3.5-22, 3.6-1, 3.7-5, 3.9-12, 3.11-1, 3.12-92, 3.15-9, 3.18-11, 4.1-11, 4.3-2, 4.3-4, 4.3-6, 4.3-9, 4.4-2, 4.5-6, 4.5-26, 4.6-22, 4.6-55, 4.7-4, 4.7-16, 4.9-4, 4.11-50, 4.12-22, 4.16-7, 4.16-16, 4.17-2, 4.17-16, 4.18-14, 4.22-1, 4.24-7, 5-1

Existing Condition	ES-23, ES-25, ES-26, 2-147, 2-149, 2-150, 3.1-1, 3.1-2, 3.2-4, 3.2-34, 3.3-14, 3.3-24, 3.4-5, 3.5-7, 3.6-1, 3.6-7, 3.7-1, 3.7-6, 3.8-1, 3.8-3, 3.8-4, 3.8-6, 3.8-19, 3.9-1, 3.9-5, 3.9-11, 3.9-17, 3.9-41, 3.10-9, 3.11-1, 3.11-14, 3.11-16, 3.12-5, 3.12-9, 3.12-10, 3.12-11, 3.12-22, 3.12-26, 3.12-30, 3.12-36, 3.12-43, 3.12-47, 3.12-48, 3.12-50, 3.12-57, 3.12-64, 3.12-76, 3.12-85, 3.12-89, 3.12-91, 3.13-1, 3.13-5, 3.13-8, 3.13-16, 3.13-93, 3.14-8, 3.15-1, 3.15-8, 3.16-1, 3.16-5, 3.16-6, 3.17-11, 3.18-10, 3.19-3, 3.20-6, 3.20-8, 3.21-6, 3.23-6, 3.23-17, 3.23-26, 3.23-32, 3.23-45, 3.24-7, 3.24-13, 3.24-14, 4.2-23, 4.3-29, 4.3-66, 4.3-73, 4.4-6, 4.5-2, 4.5-5, 4.5-6, 4.5-15, 4.5-46, 4.5-51, 4.7-1, 4.8-2, 4.8-3, 4.8-5, 4.8-10, 4.8-11, 4.8-13, 4.8-15, 4.8-16, 4.8-17, 4.8-18, 4.8-20, 4.8-21, 4.8-22, 4.8-23, 4.8-24, 4.8-29, 4.8-44, 4.8-49, 4.8-50, 4.8-51, 4.8-52, 4.8-53, 4.8-54, 4.8-55, 4.8-56, 4.8-57, 4.8-58, 4.8-60, 4.8-61, 4.8-62, 4.8-65, 4.8-66, 4.8-67, 4.8-69, 4.8-72, 4.8-75, 4.8-76, 4.9-2, 4.9-3, 4.9-4, 4.9-5, 4.9-6, 4.9-37, 4.9-38, 4.9-39, 4.9-79, 4.9-81, 4.9-87, 4.9-93, 4.9-97, 4.9-98, 4.9-101, 4.9-104, 4.9-105, 4.9-107, 4.9-108, 4.9-109, 4.9-110, 4.9-113, 4.9-115, 4.9-124, 4.9-140, 4.9-141, 4.9-143, 4.12-101, 4.12-104, 4.12-109, 4.12-146, 4.12-156, 4.14-11, 4.15-22, 4.16-6, 4.16-11, 4.16-15, 4.16-22, 4.16-25, 4.17-6, 4.17-9, 4.18-14, 4.18-20, 4.18-23, 4.18-25, 4.18-27, 4.19-18, 4.19-24, 4.19-40, 4.19-41, 4.19-42, 4.19-44, 4.19-45, 4.19-49, 4.19-51, 4.19-55, 4.19-59, 4.20-3, 4.20-8, 4.20-9, 4.20-11, 4.20-15, 4.20-16, 4.20-19, 4.20-26, 4.20-27, 4.20-30, 4.20-32, 4.20-33, 4.20-38, 4.20-41, 4.20-42, 4.20-45, 4.20-47, 4.20-52, 4.23-9, 4.23-10, 4.23-18, 4.23-20, 4.23-21, 4.23-25, 4.23-45, 4.23-47, 4.23-48, 4.23-49, 4.23-50, 4.23-51, 4.23-59, 4.23-62, 4.23-65, 4.23-85, 4.23-86, 4.23-88
Fisheries	1-9, 2-70, 2-79, 2-82, 2-83, 3.12-7, 3.12-8, 3.12-11, 3.12-18, 3.12-35, 3.13-13, 3.15-1, 3.15-12, 3.21-17, 3.23-18, 3.24-9, 4.1-3, 4.5-1, 4.5-8, 4.5-52, 4.12-16, 4.12-19, 4.12-22, 4.12-63, 4.12-113, 4.15-8, 4.15-23, 4.18-17, 4.21-38, 4.21-42, 4.21-46, 4.22-12, 4.23-34, 4.23-375-2
Geology	1-6, 3.2-1, 3.2-4, 3.2-9, 3.2-12, 3.2-32, 3.5-3, 3.5-19, 3.8-19, 3.8-21, 3.8-23, 3.9-57, 3.14-5, 3.18-13, 3.23-15, 4.1-10, 4.1-18, 4.2-2, 4.2-3, 4.2-9, 4.2-10, 4.2-11, 4.2-12, 4.2-13, 4.2-14, 4.2-15, 4.2-16, 4.2-17, 4.2-18, 4.2-21, 4.5-26, 4.5-45
Government-to-Government	ES-7, 1-10, 3.24-2, 3.24-13, 4.22-6, 4.22-8, 4.22-10, 4.22-12, 4.24-2, 4.24-6, 5-2, 5-3, 5-4, 5-6
Greenhouse Gas	3.3-6, 3.3-11, 3.4-1, 3.4-2, 3.4-3, 3.4-4, 3.4-5, 3.4-6, 3.4-7, 3.4-8, 4.3-4, 4.4-1, 4.4-2, 4.4-3, 4.4-4, 4.4-5, 4.4-6, 4.4-7, 4.4-8, 4.4-9, 4.4-10, 4.4-14, 4.4-17, 4.4-18, 4.4-19, 4.4-21, 4.4-22, 4.4-23, 4.4-24, 4.4-25, 4.4-26, 4.4-27, 4.4-28, 4.4-29, 4.4-30, 4.4-31
Groundwater	ES-7, ES-23, ES-24, ES-25, ES-26, ES-28, ES-35, 1-11, 2-8, 2-24, 2-25, 2-27, 2-28, 2-34, 2-37, 2-38, 2-44, 2-47, 2-48, 2-51, 2-52, 2-53, 2-58, 2-73, 2-76, 2-79, 2-84, 2-85, 2-86, 2-108, 2-110, 2-119, 2-147, 2-148, 2-149, 2-150, 2-152, 2-159, 3.2-11, 3.2-24, 3.2-25, 3.2-28, 3.2-32, 3.2-34, 3.2-35, 3.2-36, 3.2-37, 3.2-38, 3.4-10, 3.4-11, 3.4-12, 3.4-13, 3.5-1, 3.5-9, 3.5-10, 3.7-1, 3.7-13, 3.7-14, 3.8-1, 3.8-2, 3.8-3, 3.8-4, 3.8-5, 3.8-6, 3.8-8, 3.8-12, 3.8-13, 3.8-19, 3.8-20, 3.8-21, 3.8-24, 3.8-25, 3.8-26, 3.8-28, 3.8-29, 3.9-1, 3.9-5, 3.9-6, 3.9-11, 3.9-13, 3.9-14, 3.9-15, 3.9-16, 3.9-17, 3.9-22, 3.9-24, 3.9-25, 3.9-49, 3.9-50, 3.9-51, 3.9-52, 3.9-53, 3.9-54, 3.9-55, 3.9-56, 3.9-59, 3.9-60, 3.10-27, 3.11-1, 3.11-13, 3.11-14, 3.11-15, 3.11-16, 3.11-28, 3.11-

Groundwater (continued)	29, 3.11-30, 3.12-91, 3.13-88, 3.18-2, 3.18-6, 3.18-7, 3.18-6, 3.18-7, 3.18-10, 3.18-11, 3.18-12, 4.1-3, 4.1-9, 4.2-9, 4.2-10, 4.4-11, 4.4-12, 4.4-13, 4.4-20, 4.4-21, 4.4-23, 4.4-30, 4.4-31, 4.5-8, 4.7-2, 4.7-8, 4.7-11, 4.7-17, 4.8-1, 4.8-2, 4.8-3, 4.8-6, 4.8-7, 4.8-10, 4.8-11, 4.8-12, 4.8-13, 4.8-14, 4.8-15, 4.8-19, 4.8-20, 4.8-24, 4.8-25, 4.8-26, 4.8-27, 4.8-28, 4.8-29, 4.8-30, 4.8-38, 4.8-40, 4.8-41, 4.8-42, 4.8-44, 4.8-46, 4.8-47, 4.8-48, 4.8-49, 4.8-53, 4.8-58, 4.8-59, 4.8-60, 4.8-61, 4.8-62, 4.8-63, 4.8-64, 4.8-65, 4.8-66, 4.8-67, 4.8-68, 4.8-69, 4.8-70, 4.8-71, 4.8-72, 4.8-73, 4.8-74, 4.8-75, 4.8-76, 4.8-77, 4.9-1, 4.9-2, 4.9-3, 4.9-4, 4.9-5, 4.9-6, 4.9-7, 4.9-12, 4.9-16, 4.9-17, 4.9-19, 4.9-20, 4.9-23, 4.9-24, 4.9-27, 4.9-28, 4.9-33, 4.9-34, 4.9-36, 4.9-37, 4.9-58, 4.9-59, 4.9-60, 4.9-62, 4.9-63, 4.9-65, 4.9-67, 4.9-68, 4.9-70, 4.9-72, 4.9-75, 4.9-84, 4.9-91, 4.9-92, 4.9-93, 4.9-94, 4.9-95, 4.9-97, 4.9-104, 4.9-110, 4.9-111, 4.9-113, 4.9-114, 4.9-121, 4.9-122, 4.9-124, 4.9-125, 4.9-126, 4.9-127, 4.9-128, 4.9-129, 4.9-130, 4.9-131, 4.9-132, 4.9-133, 4.9-135, 4.9-136, 4.9-137, 4.9-139, 4.9-140, 4.9-141, 4.9-143, 4.11-1, 4.11-2, 4.11-9, 4.11-11, 4.11-12, 4.11-21, 4.11-22, 4.11-29, 4.11-30, 4.11-31, 4.11-39, 4.11-40, 4.11-52, 4.11-68, 4.11-71, 4.11-72, 4.12-3, 4.12-26, 4.12-28, 4.12-30, 4.12-40, 4.12-46, 4.12-47, 4.12-81, 4.12-96, 4.12-102, 4.12-103, 4.12-104, 4.12-112, 4.12-113, 4.12-127, 4.12-147, 4.12-149, 4.12-156, 4.12-160, 4.12-174, 4.12-180, 4.16-10, 4.18-6, 4.18-13, 4.18-20, 4.18-29, 4.21-36, 4.21-38, 4.21-39, 4.21-40, 4.21-42, 4.21-43, 4.21-46, 4.22-3, 4.23-32, 4.23-33, 4.23-35, 4.23-50, 4.23-58, 4.23-61
Habitat	ES-7, ES-26, ES-27, ES-29, ES-30, ES-32, ES-35, 1-11, 2-43, 2-65, 2-70, 2-72, 2-73, 2-79, 2-81, 2-82, 2-83, 2-86, 2-130, 2-150, 2-151, 2-153, 2-154, 2-156, 2-159, 3.2-11, 3.4-13, 3.4-14, 3.4-15, 3.5-1, 3.6-1, 3.6-5, 3.8-32, 3.9-32, 3.9-46, 3.10-2, 3.10-5, 3.10-9, 3.10-22, 3.10-23, 3.10-24, 3.10-26, 3.10-27, 3.10-28, 3.10-29, 3.10-30, 3.10-31, 3.10-32, 3.10-33, 3.10-34, 3.10-35, 3.10-36, 3.10-37, 3.10-38, 3.11-1, 3.11-13, 3.11-14, 3.11-16, 3.11-17, 3.11-18, 3.11-20, 3.11-21, 3.11-23, 3.11-24, 3.11-27, 3.11-28, 3.11-29, 3.11-30, 3.12-1, 3.12-5, 3.12-7, 3.12-8, 3.12-9, 3.12-10, 3.12-11, 3.12-12, 3.12-14, 3.12-15, 3.12-16, 3.12-17, 3.12-18, 3.12-22, 3.12-23, 3.12-25, 3.12-26, 3.12-27, 3.12-28, 3.12-29, 3.12-30, 3.12-31, 3.12-32, 3.12-35, 3.12-36, 3.12-38, 3.12-39, 3.12-40, 3.12-41, 3.12-42, 3.12-43, 3.12-44, 3.12-47, 3.12-49, 3.12-50, 3.12-51, 3.12-55, 3.12-56, 3.12-57, 3.12-58, 3.12-62, 3.12-63, 3.12-65, 3.12-66, 3.12-68, 3.12-71, 3.12-75, 3.12-77, 3.12-78, 3.12-79, 3.12-80, 3.12-82, 3.12-83, 3.12-84, 3.12-85, 3.12-94, 3.12-97, 3.12-100, 3.12-101, 3.13-1, 3.13-5, 3.13-6, 3.13-7, 3.13-8, 3.13-9, 3.13-10, 3.13-11, 3.13-13, 3.13-15, 3.13-16, 3.13-17, 3.13-18, 3.13-19, 3.13-20, 3.13-21, 3.13-22, 3.13-23, 3.13-24, 3.13-25, 3.13-26, 3.13-27, 3.13-29, 3.13-30, 3.13-31, 3.13-33, 3.13-35, 3.13-36, 3.13-37, 3.13-39, 3.13-40, 3.13-41, 3.13-42, 3.13-43, 3.13-45, 3.13-46, 3.13-47, 3.13-49, 3.13-50, 3.13-51, 3.13-53, 3.13-54, 3.13-55, 3.13-57, 3.13-58, 3.13-59, 3.13-61, 3.13-62, 3.13-63, 3.13-65, 3.13-66, 3.13-67, 3.13-69, 3.13-70, 3.13-71, 3.13-73, 3.13-74, 3.13-75, 3.13-77, 3.13-78, 3.13-79, 3.13-81, 3.13-82, 3.13-83, 3.13-84, 3.13-85, 3.13-86, 3.13-87, 3.13-88, 3.13-89, 3.13-90, 3.13-91, 3.13-92, 3.14-6, 3.15-12, 3.20-6, 3.23-7, 3.23-15, 3.23-18, 3.23-21, 3.23-35, 3.23-40, 3.23-46, 3.23-47, 3.23-48, 3.24-2, 3.24-9, 3.24-14, 4.1-4, 4.1-7, 4.1-10, 4.1-12, 4.2-3, 4.2-6, 4.2-9, 4.2-21, 4.3-60, 4.4-13, 4.4-15, 4.4-16, 4.4-17, 4.4-20, 4.4-22, 4.4-24, 4.4-30, 4.4-31, 4.5-5, 4.6-1, 4.7-2, 4.7-17, 4.8-1, 4.8-30, 4.9-37, 4.9-49, 4.9-52, 4.9-54, 4.9-55, 4.9-79, 4.9-104, 4.9-120, 4.10-1, 4.10-2,

Habitat (continued)	4.10-3, 4.10-5, 4.10-6, 4.10-7, 4.10-8, 4.10-9, 4.10-14, 4.10-15, 4.10-16, 4.10-17, 4.10-18, 4.10-19, 4.10-21, 4.10-24, 4.10-25, 4.10-26, 4.10-27, 4.10-29, 4.10-31, 4.10-32, 4.10-33, 4.10-35, 4.10-37, 4.10-38, 4.10-39, 4.10-40, 4.10-43, 4.10-47, 4.10-52, 4.10-53, 4.10-54, 4.10-55, 4.10-57, 4.10-58, 4.11-1, 4.11-2, 4.11-4, 4.11-5, 4.11-6, 4.11-7, 4.11-9, 4.11-10, 4.11-11, 4.11-12, 4.11-15, 4.11-22, 4.11-31, 4.11-40, 4.11-50, 4.11-54, 4.11-66, 4.11-67, 4.11-68, 4.11-71, 4.12-1, 4.12-2, 4.12-3, 4.12-4, 4.12-7, 4.12-8, 4.12-10, 4.12-11, 4.12-12, 4.12-13, 4.12-14, 4.12-15, 4.12-19, 4.12-20, 4.12-21, 4.12-22, 4.12-23, 4.12-24, 4.12-25, 4.12-28, 4.12-31, 4.12-32, 4.12-33, 4.12-37, 4.12-38, 4.12-39, 4.12-40, 4.12-46, 4.12-48, 4.12-50, 4.12-54, 4.12-55, 4.12-56, 4.12-58, 4.12-59, 4.12-60, 4.12-61, 4.12-62, 4.12-63, 4.12-65, 4.12-66, 4.12-67, 4.12-68, 4.12-69, 4.12-70, 4.12-71, 4.12-72, 4.12-73, 4.12-74, 4.12-75, 4.12-76, 4.12-77, 4.12-78, 4.12-79, 4.12-80, 4.12-81, 4.12-82, 4.12-83, 4.12-84, 4.12-85, 4.12-86, 4.12-87, 4.12-88, 4.12-89, 4.12-91, 4.12-92, 4.12-93, 4.12-94, 4.12-95, 4.12-99, 4.12-100, 4.12-104, 4.12-110, 4.12-111, 4.12-112, 4.12-116, 4.12-117, 4.12-118, 4.12-119, 4.12-120, 4.12-121, 4.12-122, 4.12-123, 4.12-124, 4.12-125, 4.12-126, 4.12-127, 4.12-128, 4.12-129, 4.12-130, 4.12-131, 4.12-132, 4.12-133, 4.12-134, 4.12-135, 4.12-136, 4.12-137, 4.12-138, 4.12-143, 4.12-145, 4.12-147, 4.12-149, 4.12-157, 4.12-158, 4.12-159, 4.12-160, 4.12-162, 4.12-163, 4.12-164, 4.12-165, 4.12-166, 4.12-167, 4.12-168, 4.12-169, 4.12-170, 4.12-171, 4.12-172, 4.12-174, 4.12-175, 4.12-176, 4.12-177, 4.12-178, 4.12-179, 4.12-180, 4.12-181, 4.12-182, 4.12-184, 4.12-185, 4.12-186, 4.12-187, 4.12-188, 4.12-189, 4.12-190, 4.12-191, 4.12-192, 4.12-193, 4.12-194, 4.12-195, 4.12-196, 4.12-197, 4.12-198, 4.12-199, 4.12-201, 4.12-202, 4.12-203, 4.12-204, 4.13-1, 4.13-2, 4.13-4, 4.13-5, 4.13-6, 4.13-7, 4.13-8, 4.13-9, 4.13-10, 4.13-11, 4.13-12, 4.13-13, 4.13-14, 4.13-15, 4.13-16, 4.13-17, 4.13-18, 4.13-19, 4.13-20, 4.13-21, 4.13-22, 4.13-23, 4.13-24, 4.13-25, 4.13-26, 4.13-27, 4.13-28, 4.13-29, 4.13-30, 4.13-31, 4.13-32, 4.13-33, 4.13-34, 4.13-35, 4.13-36, 4.13-37, 4.13-38, 4.13-39, 4.13-40, 4.13-41, 4.13-42, 4.13-43, 4.13-44, 4.13-45, 4.13-46, 4.13-47, 4.13-48, 4.13-49, 4.13-50, 4.13-51, 4.13-52, 4.13-53, 4.13-54, 4.13-55, 4.13-56, 4.13-57, 4.13-58, 4.13-59, 4.13-60, 4.13-61, 4.13-62, 4.13-63, 4.13-64, 4.13-65, 4.13-66, 4.13-67, 4.13-68, 4.13-69, 4.13-70, 4.13-71, 4.13-72, 4.13-73, 4.13-74, 4.13-75, 4.13-76, 4.13-77, 4.13-78, 4.13-79, 4.13-80, 4.13-81, 4.13-82, 4.13-83, 4.13-84, 4.13-85, 4.13-86, 4.13-87, 4.13-88, 4.13-89, 4.13-90, 4.13-91, 4.13-92, 4.13-93, 4.13-94, 4.13-95, 4.13-96, 4.13-97, 4.13-98, 4.13-99, 4.13-100, 4.13-101, 4.13-102, 4.13-104, 4.13-105, 4.13-106, 4.13-107, 4.13-108, 4.13-109, 4.13-110, 4.13-111, 4.13-112, 4.13-113, 4.13-115, 4.16-3, 4.18-19, 4.18-31, 4.19-21, 4.19-65, 4.21-19, 4.21-36, 4.21-38, 4.21-39, 4.21-40, 4.21-41, 4.21-42, 4.21-43, 4.21-46, 4.21-49, 4.21-56, 4.22-3, 4.22-5, 4.22-6, 4.22-8, 4.22-14, 4.22-17, 4.23-6, 4.23-7, 4.23-12, 4.23-15, 4.23-19, 4.23-23, 4.23-24, 4.23-25, 4.23-36, 4.23-38, 4.23-41, 4.23-44, 4.23-46, 4.23-47, 4.23-48, 4.23-49, 4.23-50, 4.23-53, 4.23-55, 4.23-57, 4.23-60, 4.23-62, 4.23-63, 4.23-64, 4.23-65, 4.23-66, 4.23-68, 4.23-70, 4.23-71, 4.23-76, 4.23-85, 4.23-86, 4.24-4, 4.24-5, 4.24-10, 4.24-12, 4.24-13, 5-2
Hazardous Materials	ES-32, 1-2, 1-9, 2-58, 2-156, 3.4-11, 3.7-1, 3.7-2, 3.7-3, 3.7-6, 3.7-7, 3.7-10, 3.7-12, 3.7-14, 3.18-10, 3.18-11, 3.18-15, 4.4-11, 4.4-20, 4.4-21, 4.4-23, 4.7-1, 4.7-2, 4.7-3, 4.7-4, 4.7-5, 4.7-6, 4.7-8, 4.7-9, 4.7-10, 4.7-11, 4.7-12, 4.7-13, 4.7-14, 4.7-15, 4.7-16, 4.7-17, 4.7-18,

Hazardous Materials (continued)	4.7-19, 4.7-21, 4.7-22, 4.9-45, 4.9-51, 4.9-57, 4.9-68, 4.11-12, 4.12-2, 4.12-14, 4.12-19, 4.12-21, 4.12-22, 4.12-23, 4.12-67, 4.12-68, 4.12-74, 4.12-86, 4.12-94, 4.12-188, 4.12-204, 4.13-98, 4.16-3, 4.18-1, 4.18-15, 4.18-16, 4.18-31, 4.18-34,
Idaho Administrative Procedures Act	2-6, 2-10, 2-34, 2-48, 2-55, 2-65, 2-104, 2-125, 2-130, 2-135, 2-143, 3.3-8, 3.3-12, 3.3-13, 3.6-6, 3.7-2, 3.9-14, 3.9-15, 3.9-16, 3.9-51, 3.9-52, 4.2-5, 4.2-6, 4.2-8, 4.9-13, 4.9-24, 4.9-46, 4.9-59, 4.9-60, 4.9-62, 4.9-65, 4.9-69, 4.9-77, 4.9-92, 4.9-93, 4.9-110, 4.9-113, 4.9-135, 4.9-136,
Idaho Department of Environmental Quality	ES-1, 1-2, 2-10, 2-34, 2-46, 2-48, 2-54, 2-63, 2-77, 2-79, 2-104, 3.3-2, 3.3-8, 3.3-9, 3.3-12, 3.3-13, 3.3-14, 3.3-16, 3.4-5, 3.4-6, 3.4-8, 3.7-2, 3.7-13, 3.7-14, 3.9-12, 3.9-13, 3.9-14, 3.9-16, 3.9-32, 3.9-42, 3.9-45, 3.9-46, 3.9-47, 3.11-12, 3.12-11, 3.12-75, 3.12-77, 3.12-84, 3.12-92, 3.12-93, 3.15-9, 3.18-14, 3.18-17, 3.21-10, 3.23-18, 3.23-21, 3.23-22, 4.1-3, 4.3-3, 4.3-5, 4.3-6, 4.3-7, 4.3-8, 4.3-9, 4.3-10, 4.3-11, 4.3-12, 4.3-19, 4.3-20, 4.3-22, 4.3-23, 4.3-29, 4.3-43, 4.3-46, 4.3-48, 4.3-49, 4.3-51, 4.3-52, 4.3-53, 4.3-54, 4.3-59, 4.3-60, 4.3-62, 4.3-64, 4.3-70, 4.3-73, 4.4-2, 4.4-10, 4.9-7, 4.9-13, 4.9-24, 4.9-46, 4.9-47, 4.9-48, 4.9-49, 4.9-51, 4.9-52, 4.9-53, 4.9-54, 4.9-55, 4.9-56, 4.9-57, 4.9-67, 4.9-75, 4.9-85, 4.9-86, 4.9-89, 4.9-92, 4.9-94, 4.9-109, 4.9-114, 4.9-117, 4.9-119, 4.9-120, 4.9-121, 4.9-136, 4.12-31, 4.12-32, 4.12-40, 4.12-43, 4.12-49, 4.18-13, 4.18-19, 4.18-20, 4.23-29, 4.23-32, 4.23-335-1
Idaho Department of Fish and Game	3.11-12, 3.11-20, 3.12-9, 3.12-11, 3.12-16, 3.12-23, 3.12-37, 3.12-41, 3.12-63, 3.12-76, 3.13-5, 3.13-6, 3.13-15, 3.13-20, 3.13-25, 3.13-26, 3.13-27, 3.13-28, 3.13-50, 3.13-54, 3.13-58, 3.13-73, 3.13-82, 3.13-87, 3.13-88, 3.13-89, 3.13-90, 3.13-92
Idaho Department of Water Resources	2-46, 2-47, 2-48, 2-52, 2-53, 2-58, 2-63, 2-76, 3.2-4, 3.8-3, 3.8-4, 3.8-5, 3.8-28, 3.8-29, 3.8-32, 3.8-33, 3.9-14, 3.11-12, 3.12-9, 3.23-15, 4.8-1, 4.8-46, 4.8-47, 4.8-48, 4.8-64, 4.9-48, 4.9-49, 4.9-54, 4.12-31, 4.12-32, 4.23-29, 4.23-32, 4.23-33, 4.23-35
Indirect Effects	3.4-3, 3.4-14, 3.5-2, 3.23-25, 4.1-5, 4.1-6, 4.2-2, 4.2-18, 4.3-20, 4.3-28, 4.3-37, 4.3-51, 4.3-55, 4.4-2, 4.4-4, 4.4-5, 4.4-6, 4.4-14, 4.4-16, 4.4-25, 4.5-2, 4.5-5, 4.6-3, 4.6-17, 4.6-19, 4.6-28, 4.7-1, 4.7-10, 4.7-15, 4.8-2, 4.8-12, 4.8-13, 4.8-48, 4.8-49, 4.8-60, 4.8-63, 4.8-64, 4.9-6, 4.10-3, 4.10-7, 4.10-10, 4.10-16, 4.10-41, 4.10-42, 4.10-46, 4.11-5, 4.11-8, 4.11-9, 4.11-10, 4.11-15, 4.11-22, 4.11-43, 4.11-49, 4.11-53, 4.11-59, 4.11-68, 4.11-69, 4.12-2, 4.12-19, 4.12-197, 4.13-2, 4.13-5, 4.13-6, 4.13-7, 4.13-12, 4.13-13, 4.13-15, 4.13-22, 4.13-23, 4.13-25, 4.13-27, 4.13-28, 4.13-29, 4.13-30, 4.13-31, 4.13-34, 4.13-36, 4.13-38, 4.13-39, 4.13-40, 4.13-41, 4.13-43, 4.13-44, 4.13-47, 4.13-48, 4.13-51, 4.13-52, 4.13-53, 4.13-55, 4.13-56, 4.13-59, 4.13-62, 4.13-66, 4.13-67, 4.13-70, 4.13-71, 4.13-72, 4.13-74, 4.13-76, 4.13-79, 4.13-80, 4.13-81, 4.13-82, 4.13-83, 4.13-84, 4.13-85, 4.13-87, 4.13-91, 4.13-93, 4.13-94, 4.13-95, 4.13-96, 4.13-97, 4.13-98, 4.13-99, 4.13-100, 4.13-103, 4.13-105, 4.13-106, 4.14-1, 4.14-4, 4.14-5, 4.14-11, 4.14-18, 4.15-1, 4.15-3, 4.15-21, 4.16-2, 4.16-23, 4.17-3, 4.17-4, 4.17-8, 4.17-9, 4.17-16, 4.17-20, 4.17-22, 4.18-4, 4.18-13, 4.18-14, 4.18-15, 4.18-16, 4.18-19, 4.18-20, 4.18-21, 4.18-22, 4.18-23, 4.18-25, 4.18-26, 4.18-27, 4.19-2, 4.19-3, 4.19-4, 4.19-14, 4.19-63, 4.20-3, 4.20-6, 4.20-49, 4.20-50, 4.21-2, 4.21-4, 4.21-48, 4.22-2, 4.22-3, 4.22-13, 4.22-17, 4.23-1, 4.23-27, 4.23-33, 4.23-

Indirect Effects	43, 4.23-45, 4.23-55, 4.23-62, 4.23-68, 4.23-71, 4.23-76, 4.23-79, 4.23-81, 4.23-82, 4.23-844.24-1, 4.24-6
Infiltration	2-48, 2-51, 2-86, 2-112, 2-126, 2-143, 3.2-16, 3.8-19, 3.9-14, 4.1-3, 4.4-11, 4.5-17, 4.5-20, 4.5-24, 4.8-29, 4.8-30, 4.8-44, 4.8-46, 4.8-54, 4.8-55, 4.8-59, 4.8-62, 4.8-76, 4.9-13, 4.9-28, 4.9-60, 4.9-69, 4.9-71, 4.9-72, 4.9-92, 4.9-93, 4.9-135, 4.11-30, 4.12-104
Inventoried Roadless Areas	ES-8, ES-18, ES-34, ES-35, 1-11, 2-3, 2-9, 2-21, 2-84, 2-119, 2-124, 2-130, 2-134, 2-143, 2-144, 2-146, 2-158, 2-159, 3.4-17, 3.5-2, 3.19-3, 3.19-5, 3.19-12, 3.23-21, 3.23-25, 3.23-26, 3.23-27, 3.23-29, 3.23-31, 3.23-32, 3.23-33, 3.23-35, 3.23-36, 3.23-37, 3.23-38, 3.23-39, 3.23-40, 3.23-41, 4.1-4, 4.2-18, 4.3-61, 4.4-17, 4.4-22, 4.4-23, 4.4-24, 4.4-30, 4.4-31, 4.5-2, 4.5-6, 4.5-11, 4.5-15, 4.5-19, 4.5-29, 4.5-30, 4.5-34, 4.5-38, 4.5-42, 4.9-120, 4.13-4, 4.13-19, 4.15-14, 4.15-16, 4.15-19, 4.19-5, 4.19-10, 4.19-16, 4.19-49, 4.19-53, 4.19-55, 4.19-56, 4.19-57, 4.19-58, 4.19-66, 4.21-42, 4.23-17, 4.23-21, 4.23-45, 4.23-46, 4.23-47, 4.23-48, 4.23-49, 4.23-50, 4.23-51, 4.23-52, 4.23-53, 4.23-54, 4.23-55, 4.23-56, 4.23-57, 4.23-58, 4.23-59, 4.23-60, 4.23-61, 4.23-62, 4.23-63, 4.23-64, 4.23-65, 4.23-66, 4.23-67, 4.23-69, 4.23-87, 4.23-88, 4.23-87, 4.23-88, 4.23-87, 4.23-88, 4.23-87
Irreversible and Irretrievable	4.1-1, 4.1-20, 4.2-21, 4.3-67, 4.4-29, 4.5-45, 4.6-52, 4.7-17, 4.8-65, 4.9-128, 4.9-129, 4.10-46, 4.10-47, 4.11-57, 4.11-58, 4.12-196, 4.12-197, 4.13-109, 4.14-15, 4.15-22, 4.16-25, 4.17-18, 4.17-19, 4.18-31, 4.19-65, 4.20-51, 4.21-49, 4.22-15, 4.23-25, 4.23-43, 4.23-65, 4.23-834.24-8, 4.24-9
Key Observation Point	3.20-8, 3.20-9, 3.20-10, 4.20-2, 4.20-3, 4.20-4, 4.20-5, 4.20-7, 4.20-8, 4.20-9, 4.20-10, 4.20-11, 4.20-12, 4.20-14, 4.20-15, 4.20-16, 4.20-17, 4.20-18, 4.20-19, 4.20-20, 4.20-21, 4.20-22, 4.20-24, 4.20-25, 4.20-26, 4.20-27, 4.20-28, 4.20-29, 4.20-30, 4.20-31, 4.20-32, 4.20-33, 4.20-34, 4.20-35, 4.20-36, 4.20-37, 4.20-38, 4.20-39, 4.20-40, 4.20-41, 4.20-43, 4.20-44, 4.20-45, 4.20-46, 4.20-47, 4.20-48, 4.23-51
Land Ownership	ES-13, ES-14, ES-17, ES-18, 2-12, 2-91, 2-123, 2-133, 3.5-2, 3.13-89, 3.14-15, 3.14-16, 3.15-1, 3.15-8, 4.5-15
Land Use	2-17, 3.2-4, 3.4-1, 3.4-6, 3.4-15, 3.5-3, 3.5-8, 3.6-7, 3.6-8, 3.6-9, 3.8-5, 3.9-17, 3.10-19, 3.11-12, 3.12-75, 3.15-1, 3.15-2, 3.15-5, 3.15-6, 3.15-8, 3.15-9, 3.15-11, 3.15-12, 3.16-5, 3.18-3, 3.18-9, 3.18-10, 3.18-18, 3.19-2, 3.20-5, 3.20-6, 3.20-7, 3.20-8, 3.21-2, 3.21-13, 3.24-7, 4.1-5, 4.3-10, 4.4-13, 4.4-14, 4.4-20, 4.4-22, 4.4-23, 4.9-131, 4.9-132, 4.13-5, 4.13-44, 4.13-71, 4.13-73, 4.13-75, 4.13-81, 4.13-91, 4.13-93, 4.13-97, 4.13-99, 4.13-102, 4.14-1, 4.14-18, 4.14-19, 4.14-21, 4.15-1, 4.15-2, 4.15-3, 4.15-4, 4.15-5, 4.15-6, 4.15-7, 4.15-8, 4.15-9, 4.15-10, 4.15-11, 4.15-12, 4.15-13, 4.15-14, 4.15-15, 4.15-16, 4.15-17, 4.15-18, 4.15-19, 4.15-20, 4.15-21, 4.15-22, 4.15-23, 4.15-24, 4.15-25, 4.15-27, 4.16-2, 4.18-4, 4.18-11, 4.18-12, 4.18-25, 4.18-29, 4.18-31, 4.20-2, 4.22-4, 4.22-15, 4.22-16
Landmark Maintenance Facility	2-9, 2-11, 2-53, 2-57, 2-58, 2-74, 2-86, 2-130, 2-135, 2-145, 2-146, 3.5-20, 3.11-3, 3.11-4, 3.17-4, 4.2-13, 4.2-18, 4.5-15, 4.5-18, 4.5-22, 4.6-10, 4.6-12, 4.6-14, 4.6-25, 4.6-33, 4.6-34, 4.7-8, 4.7-10, 4.7-21, 4.8-46, 4.9-56, 4.9-57, 4.9-91, 4.9-110, 4.9-121, 4.9-124, 4.10-34, 4.11-40, 4.13-9, 4.13-20, 4.13-30, 4.13-41, 4.13-44, 4.13-45, 4.13-54, 4.13-57, 4.13-89, 4.15-7, 4.15-8, 4.17-7, 4.17-8, 4.17-9, 4.17-13,

Landmark Maintenance Facility (continued)	4.17-21, 4.17-22, 4.17-23, 4.19-11, 4.19-18, 4.19-19, 4.19-24, 4.19-28, 4.19-33, 4.19-47, 4.19-48, 4.19-53, 4.19-55, 4.19-56, 4.20-10, 4.20-12, 4.20-15, 4.20-17, 4.20-28, 4.20-29, 4.20-30, 4.20-37, 4.20-49, 4.21-37, 4.21-42, 4.21-44, 4.21-45, 4.21-46, 4.22-3, 4.22-12, 4.23-34, 4.23-39, 4.23-40
Mercury	ES-25, ES-26, ES-31, 2-31, 2-33, 2-110, 2-149, 2-150, 2-155, 3.3-10, 3.3-14, 3.3-16, 3.3-17, 3.3-21, 3.3-26, 3.3-35, 3.5-22, 3.7-1, 3.8-9, 3.9-15, 3.9-22, 3.9-25, 3.9-27, 3.9-28, 3.9-29, 3.9-31, 3.9-33, 3.9-42, 3.9-45, 3.9-51, 3.9-53, 3.9-54, 3.9-58, 3.9-59, 3.10-21, 3.12-75, 3.12-81, 3.12-91, 3.12-92, 3.12-93, 3.12-94, 3.13-93, 3.18-11, 3.18-12, 4.1-3, 4.1-8, 4.3-1, 4.3-2, 4.3-4, 4.3-6, 4.3-9, 4.3-15, 4.3-21, 4.3-22, 4.3-27, 4.3-28, 4.3-34, 4.3-35, 4.3-36, 4.3-43, 4.3-49, 4.3-52, 4.3-59, 4.3-62, 4.3-69, 4.3-70, 4.3-73, 4.5-6, 4.5-9, 4.5-26, 4.5-27, 4.5-28, 4.5-49, 4.5-52, 4.7-1, 4.7-7, 4.7-9, 4.7-15, 4.7-17, 4.9-2, 4.9-4, 4.9-7, 4.9-21, 4.9-24, 4.9-27, 4.9-28, 4.9-30, 4.9-32, 4.9-33, 4.9-34, 4.9-35, 4.9-36, 4.9-42, 4.9-44, 4.9-45, 4.9-46, 4.9-51, 4.9-52, 4.9-59, 4.9-65, 4.9-66, 4.9-69, 4.9-70, 4.9-71, 4.9-72, 4.9-75, 4.9-76, 4.9-77, 4.9-78, 4.9-84, 4.9-85, 4.9-94, 4.9-97, 4.9-101, 4.9-102, 4.9-103, 4.9-108, 4.9-109, 4.9-115, 4.9-119, 4.9-120, 4.9-123, 4.9-124, 4.9-125, 4.9-128, 4.9-129, 4.9-133, 4.9-134, 4.9-135, 4.9-136, 4.9-140, 4.9-141, 4.9-144, 4.9-145, 4.11-57, 4.12-39, 4.12-41, 4.12-43, 4.12-44, 4.12-45, 4.12-46, 4.12-47, 4.12-48, 4.12-49, 4.12-50, 4.12-104, 4.12-137, 4.12-138, 4.12-203, 4.12-202, 4.13-34, 4.13-39, 4.13-47, 4.13-62, 4.13-86, 4.13-87, 4.13-104, 4.18-13, 4.18-15, 4.18-17, 4.18-18, 4.18-19, 4.18-33, 4.18-35, 4.23-8, 4.23-50
Mitigation	ES-2, ES-5, ES-6, ES-7, ES-8, ES-13, 1-5, 1-7, 1-8, 1-12, 2-3, 2-76, 2-81, 2-82, 2-83, 2-84, 2-144, 2-145, 2-146, 3.2-19, 3.7-12, 3.11-11, 3.11-15, 3.11-28, 3.12-31, 3.15-9, 3.17-9, 3.21-18, 4.1-1, 4.1-4, 4.1-5, 4.1-6, 4.2-19, 4.3-21, 4.3-43, 4.3-59, 4.3-62, 4.3-63, 4.4-5, 4.4-10, 4.4-12, 4.4-15, 4.4-25, 4.4-26, 4.5-2, 4.5-5, 4.5-20, 4.5-24, 4.5-43, 4.5-47, 4.6-50, 4.7-1, 4.7-6, 4.7-13, 4.7-15, 4.7-16, 4.8-46, 4.8-48, 4.8-64, 4.9-34, 4.9-41, 4.9-50, 4.9-51, 4.9-56, 4.9-57, 4.9-68, 4.9-69, 4.9-83, 4.9-88, 4.9-91, 4.9-98, 4.9-102, 4.9-108, 4.9-114, 4.9-118, 4.9-119, 4.9-121, 4.9-124, 4.9-129, 4.9-132, 4.9-135, 4.10-3, 4.10-9, 4.10-42, 4.11-3, 4.11-4, 4.11-7, 4.11-8, 4.11-9, 4.11-10, 4.11-50, 4.11-51, 4.11-52, 4.11-53, 4.11-54, 4.11-55, 4.11-56, 4.11-57, 4.11-58, 4.12-14, 4.12-19, 4.12-21, 4.12-30, 4.12-193, 4.12-196, 4.13-6, 4.13-7, 4.13-9, 4.13-13, 4.13-16, 4.13-18, 4.13-23, 4.13-28, 4.13-29, 4.13-34, 4.13-38, 4.13-39, 4.13-41, 4.13-43, 4.13-47, 4.13-48, 4.13-51, 4.13-53, 4.13-55, 4.13-59, 4.13-60, 4.13-62, 4.13-63, 4.13-71, 4.13-74, 4.13-80, 4.13-82, 4.13-83, 4.13-87, 4.13-89, 4.13-92, 4.13-94, 4.13-96, 4.13-99, 4.13-101, 4.13-103, 4.13-104, 4.13-106, 4.14-12, 4.14-13, 4.15-21, 4.16-23, 4.17-3, 4.17-5, 4.17-7, 4.17-15, 4.17-18, 4.17-22, 4.18-2, 4.18-22, 4.18-30, 4.19-15, 4.19-62, 4.20-5, 4.20-6, 4.20-7, 4.20-8, 4.20-27, 4.20-49, 4.21-31, 4.21-33, 4.21-48, 4.21-56, 4.22-13, 4.23-4, 4.23-6, 4.23-12, 4.23-13, 4.23-21, 4.23-22, 4.23-36, 4.23-42, 4.23-49, 4.23-62, 4.23-824.24-5, 4.24-6, 4.24-8, 5-5
Mitigation Measure	ES-7, ES-13, 1-5, 2-3, 2-76, 2-81, 2-84, 2-144, 2-145, 2-146, 3.2-19, 3.17-9, 4.1-1, 4.1-5, 4.1-6, 4.2-19, 4.3-21, 4.3-43, 4.3-59, 4.3-62, 4.3-63, 4.4-10, 4.4-12, 4.4-15, 4.4-25, 4.4-26, 4.5-20, 4.5-24, 4.5-43, 4.5-47, 4.6-50, 4.7-1, 4.7-6, 4.7-13, 4.7-15, 4.7-16, 4.8-64, 4.9-41, 4.9-50, 4.9-51, 4.9-56, 4.9-57, 4.9-68, 4.9-83, 4.9-88, 4.9-91, 4.9-98, 4.9-102, 4.9-114, 4.9-118, 4.9-119, 4.9-121, 4.9-124, 4.9-129, 4.9-132, 4.10-3, 4.10-9, 4.10-42, 4.11-7, 4.11-50, 4.11-58, 4.12-14, 4.12-



Mitigation Measure (continued)	21, 4.12-193, 4.13-6, 4.13-7, 4.13-9, 4.13-13, 4.13-16, 4.13-18, 4.13-23, 4.13-28, 4.13-29, 4.13-34, 4.13-38, 4.13-39, 4.13-41, 4.13-43, 4.13-47, 4.13-48, 4.13-51, 4.13-53, 4.13-55, 4.13-59, 4.13-60, 4.13-62, 4.13-63, 4.13-71, 4.13-74, 4.13-80, 4.13-82, 4.13-83, 4.13-87, 4.13-89, 4.13-92, 4.13-94, 4.13-96, 4.13-99, 4.13-101, 4.13-103, 4.13-104, 4.13-106, 4.14-12, 4.14-13, 4.15-21, 4.16-23, 4.17-3, 4.17-5, 4.17-7, 4.17-15, 4.17-18, 4.17-22, 4.18-2, 4.18-30, 4.19-15, 4.19-62, 4.20-5, 4.20-6, 4.20-7, 4.20-8, 4.20-27, 4.20-49, 4.21-48, 4.22-13, 4.23-4, 4.23-6, 4.23-12, 4.23-13, 4.23-21, 4.23-42, 4.23-49, 4.23-62, 4.23-824.24-5, 4.24-6, 5-5
National Environmental Policy Act (NEPA)	ES-1, ES-5, ES-6, ES-7, ES-8, 1-1, 1-2, 1-5, 1-7, 1-10, 1-11, 1-12, 2-1, 2-65, 2-83, 2-139, 3.2-16, 3.3-9, 3.4-2, 3.4-3, 3.10-2, 3.12-8, 3.12-9, 3.12-63, 3.14-1, 3.15-5, 3.15-7, 3.16-2, 3.17-3, 3.17-9, 3.18-4, 3.23-14, 4.1-1, 4.1-2, 4.1-5, 4.1-6, 4.1-12, 4.2-8, 4.4-2, 4.4-26, 4.13-112, 4.17-4, 5-5, 5-6
National Register of Historic Places	3.17-1, 3.17-2, 3.17-9, 3.17-10, 3.17-15, 3.17-17, 3.17-18, 3.17-19, 3.17-23, 3.23-22, 3.24-1, 4.17-2, 4.17-3, 4.17-5, 4.17-7, 4.17-9, 4.17-19, 4.23-42
No Action Alternative	ES-1, ES-8, ES-21, 1-1, 1-11, 2-1, 2-3, 2-139, 2-146, 4.2-18, 4.2-20, 4.3-62, 4.4-24, 4.5-44, 4.7-11, 4.7-12, 4.8-14, 4.8-66, 4.10-47, 4.12-192, 4.12-193, 4.17-14, 4.17-17, 4.17-19, 4.18-29, 4.19-61, 4.20-49, 4.21-5, 4.21-33, 4.21-48, 4.23-51, 4.23-55, 4.23-58, 4.23-614.24-5, 4.24-8, 4.24-9
Noise	2-28, 3.4-10, 3.6-1, 3.6-2, 3.6-3, 3.6-5, 3.6-6, 3.6-7, 3.6-8, 3.6-9, 3.6-10, 3.13-92, 3.17-3, 3.17-4, 3.18-3, 3.18-9, 3.18-18, 3.18-19, 3.19-1, 3.19-3, 4.4-1, 4.4-9, 4.4-17, 4.6-1, 4.6-2, 4.6-3, 4.6-4, 4.6-5, 4.6-6, 4.6-7, 4.6-8, 4.6-9, 4.6-10, 4.6-11, 4.6-12, 4.6-13, 4.6-14, 4.6-15, 4.6-16, 4.6-17, 4.6-18, 4.6-19, 4.6-20, 4.6-22, 4.6-23, 4.6-24, 4.6-25, 4.6-26, 4.6-27, 4.6-28, 4.6-29, 4.6-30, 4.6-31, 4.6-32, 4.6-33, 4.6-34, 4.6-35, 4.6-36, 4.6-37, 4.6-38, 4.6-39, 4.6-40, 4.6-41, 4.6-42, 4.6-43, 4.6-44, 4.6-45, 4.6-46, 4.6-47, 4.6-48, 4.6-49, 4.6-50, 4.6-51, 4.6-52, 4.6-53, 4.6-55, 4.12-14, 4.12-18, 4.13-1, 4.13-2, 4.13-3, 4.13-4, 4.13-5, 4.13-6, 4.13-7, 4.13-8, 4.13-9, 4.13-12, 4.13-15, 4.13-16, 4.13-17, 4.13-18, 4.13-19, 4.13-20, 4.13-21, 4.13-22, 4.13-23, 4.13-25, 4.13-28, 4.13-29, 4.13-30, 4.13-32, 4.13-34, 4.13-35, 4.13-36, 4.13-37, 4.13-38, 4.13-39, 4.13-40, 4.13-41, 4.13-42, 4.13-43, 4.13-44, 4.13-46, 4.13-47, 4.13-48, 4.13-49, 4.13-51, 4.13-52, 4.13-53, 4.13-55, 4.13-56, 4.13-57, 4.13-58, 4.13-59, 4.13-60, 4.13-61, 4.13-62, 4.13-63, 4.13-65, 4.13-66, 4.13-67, 4.13-68, 4.13-69, 4.13-70, 4.13-71, 4.13-72, 4.13-73, 4.13-74, 4.13-75, 4.13-76, 4.13-79, 4.13-80, 4.13-81, 4.13-82, 4.13-83, 4.13-84, 4.13-85, 4.13-86, 4.13-87, 4.13-88, 4.13-89, 4.13-90, 4.13-91, 4.13-92, 4.13-93, 4.13-94, 4.13-95, 4.13-96, 4.13-97, 4.13-98, 4.13-99, 4.13-100, 4.13-101, 4.13-102, 4.13-103, 4.13-104, 4.13-105, 4.13-106, 4.13-107, 4.13-113, 4.13-115, 4.16-3, 4.17-1, 4.17-2, 4.17-3, 4.17-4, 4.17-6, 4.17-9, 4.17-14, 4.17-17, 4.17-21, 4.17-22, 4.17-24, 4.18-1, 4.18-2, 4.18-12, 4.18-25, 4.18-26, 4.18-28, 4.18-29, 4.18-35, 4.19-2, 4.19-6, 4.19-7, 4.19-9, 4.19-11, 4.19-12, 4.19-13, 4.19-14, 4.19-15, 4.19-18, 4.19-19, 4.19-21, 4.19-22, 4.19-24, 4.19-25, 4.19-34, 4.19-35, 4.19-36, 4.19-37, 4.19-38, 4.19-39, 4.19-41, 4.19-42, 4.19-43, 4.19-44, 4.19-53, 4.19-54, 4.19-55, 4.19-57, 4.19-58, 4.19-63, 4.19-67, 4.19-68, 4.19-72, 4.19-73, 4.20-12, 4.21-19, 4.21-20, 4.21-35, 4.21-37, 4.21-44, 4.21-45, 4.22-2, 4.22-3, 4.22-4, 4.22-11, 4.22-14, 4.22-17, 4.23-3, 4.23-4, 4.23-6, 4.23-7, 4.23-10, 4.23-11, 4.23-14, 4.23-19, 4.23-

## 9.0 INDEX

Noise (continued)	21, 4.23-22, 4.23-23, 4.23-24, 4.23-25, 4.23-26, 4.23-30, 4.23-31, 4.23-33, 4.23-34, 4.23-36, 4.23-39, 4.23-41, 4.23-42, 4.23-44, 4.23-46, 4.23-49, 4.23-52, 4.23-53, 4.23-54, 4.23-55, 4.23-63, 4.23-64, 4.23-86, 4.24-1, 4.24-3, 4.24-7, 4.24-11
Noxious Weeds	2-80, 3.10-1, 3.10-5, 3.10-6, 3.10-7, 3.10-8, 3.10-39, 3.10-40, 3.11-14, 3.23-6, 3.23-47, 4.1-12, 4.4-12, 4.10-3, 4.10-9, 4.10-43, 4.13-107, 4.14-13, 4.14-14, 4.15-21, 4.15-22, 4.17-17, 4.20-50, 4.23-6, 4.23-15, 4.23-22, 4.23-23, 4.23-24, 4.23-71, 4.23-76, 4.23-78, 4.23-79, 4.23-80, 4.24-7
Off-Highway Vehicle Trail	2-5, 2-21, 2-56, 4.10-28, 4.11-6, 4.11-31, 4.15-4, 4.15-10, 4.17-13, 4.17-24, 4.19-10, 4.19-18, 4.19-20, 4.19-23, 4.19-30, 4.19-33, 4.19-34, 4.19-36, 4.19-38, 4.19-40, 4.19-46, 4.19-48, 4.19-49, 4.19-50, 4.19-51, 4.19-52, 4.19-53, 4.19-55, 4.19-57, 4.19-58, 4.19-59, 4.19-60, 4.19-61, 4.19-67, 4.19-68, 4.19-71, 4.19-72, 4.19-73, 4.20-41, 4.20-42, 4.21-20, 4.21-40, 4.21-41, 4.21-42, 4.21-46, 4.21-56, 4.22-8, 4.23-14, 4.23-15, 4.23-16, 4.23-47, 4.23-48, 4.23-50, 4.23-52, 4.23-53, 4.23-85, 4.23-86
Offsite Facilities	ES-13, ES-14, ES-17, ES-18, ES-34, 2-12, 2-57, 2-74, 2-158, 3.1-1, 3.1-2, 3.5-2, 4.5-5, 4.10-11, 4.10-13, 4.10-20, 4.10-21, 4.10-23, 4.10-28, 4.10-30, 4.10-34, 4.10-35, 4.10-41, 4.11-15, 4.11-25, 4.11-34, 4.11-43, 4.12-20, 4.20-55
Operation Phase	4.3-67, 4.6-23, 4.6-31, 4.10-5, 4.10-8, 4.11-7, 4.11-12, 4.11-21, 4.18-5, 4.18-6, 4.18-7, 4.18-8, 4.18-9, 4.18-10, 4.18-11, 4.18-12, 4.18-15, 4.18-16, 4.18-22, 4.18-23, 4.18-30, 4.20-52, 4.21-17, 4.23-20
Over-Snow Vehicle Trail	ES-32, 2-5, 2-20, 2-22, 2-56, 2-130, 2-134, 2-136, 2-156, 3.19-3, 4.4-23, 4.13-3, 4.13-4, 4.13-7, 4.13-12, 4.13-17, 4.13-29, 4.13-40, 4.13-44, 4.13-52, 4.13-56, 4.13-67, 4.13-70, 4.13-75, 4.13-101, 4.15-4, 4.15-10, 4.15-15, 4.15-19, 4.16-31, 4.19-27
Paleontological Resources	3.2-1, 3.2-17, 3.23-9,
Past, Present, and Reasonably Foreseeable Future Actions	4.1-1, 4.1-6, 4.4-26, 4.7-17, 4.10-42, 4.10-46, 4.11-53, 4.13-108, 4.13-109, 4.22-13
Payette National Forest	ES-6, ES-8, ES-13, ES-14, ES-17, ES-18, 1-2, 1-6, 1-8, 1-9, 1-11, 2-11, 2-12, 2-75, 2-81, 2-91, 2-123, 2-133, 3.1-1, 3.1-2, 3.2-3, 3.3-13, 3.4-3, 3.5-1, 3.5-3, 3.5-21, 3.6-6, 3.6-10, 3.7-6, 3.8-6, 3.9-17, 3.9-32, 3.10-1, 3.10-6, 3.10-9, 3.10-14, 3.10-15, 3.10-16, 3.10-17, 3.10-19, 3.10-20, 3.10-21, 3.10-23, 3.10-25, 3.10-26, 3.10-27, 3.10-28, 3.10-29, 3.10-37, 3.10-38, 3.11-1, 3.12-1, 3.12-8, 3.12-12, 3.12-15, 3.12-63, 3.12-75, 3.13-1, 3.13-5, 3.13-6, 3.13-7, 3.13-8, 3.13-15, 3.13-16, 3.13-19, 3.13-20, 3.13-21, 3.13-22, 3.13-24, 3.13-25, 3.13-26, 3.13-27, 3.13-31, 3.13-42, 3.13-46, 3.13-54, 3.13-61, 3.13-65, 3.13-69, 3.13-77, 3.13-81, 3.13-82, 3.13-87, 3.13-88, 3.13-89, 3.13-90, 3.14-1, 3.14-7, 3.14-8, 3.14-9, 3.14-15, 3.14-18, 3.15-1, 3.15-5, 3.15-6, 3.15-8, 3.15-9, 3.15-11, 3.16-1, 3.16-2, 3.16-5, 3.16-6, 3.16-8, 3.16-9, 3.16-10, 3.16-15, 3.17-3, 3.17-10, 3.17-17, 3.18-1, 3.18-4, 3.19-1, 3.19-3, 3.19-5, 3.19-7, 3.19-8, 3.19-9, 3.19-11, 3.19-12, 3.19-13, 3.19-14, 3.20-5, 3.20-7, 3.20-9, 3.20-10, 3.21-2, 3.21-12, 3.21-13, 3.21-18, 3.21-21, 3.21-22, 3.23-1, 3.23-5, 3.23-6, 3.23-8, 3.23-13, 3.23-15, 3.23-16, 3.23-17, 3.23-26, 3.23-27, 3.23-31, 3.23-32, 3.23-45, 3.24-7, 3.24-14, 4.1-11, 4.1-12, 4.1-17, 4.1-18, 4.1-19, 4.1-20, 4.2-4, 4.3-63, 4.4-25, 4.5-1, 4.5-2, 4.5-3, 4.5-6, 4.5-7, 4.5-10,

Payette National Forest (continued)	4.5-11, 4.5-15, 4.5-16, 4.5-18, 4.5-28, 4.5-29, 4.5-33, 4.5-34, 4.5-37, 4.5-38, 4.5-41, 4.5-44, 4.5-46, 4.5-51, 4.10-2, 4.10-3, 4.10-4, 4.10-8, 4.10-14, 4.10-15, 4.10-16, 4.10-37, 4.10-44, 4.10-57, 4.10-58, 4.11-55, 4.12-2, 4.12-27, 4.12-193, 4.12-194, 4.13-2, 4.13-5, 4.13-6, 4.13-16, 4.13-71, 4.13-73, 4.13-81, 4.13-85, 4.13-89, 4.13-108, 4.14-2, 4.14-3, 4.14-5, 4.14-6, 4.14-7, 4.14-13, 4.14-14, 4.14-15, 4.14-21, 4.15-2, 4.15-6, 4.15-9, 4.15-13, 4.15-14, 4.15-18, 4.15-23, 4.15-27, 4.16-1, 4.16-2, 4.16-7, 4.16-23, 4.17-2, 4.17-8, 4.18-18, 4.18-27, 4.18-29, 4.19-1, 4.19-3, 4.19-5, 4.19-10, 4.19-18, 4.19-29, 4.19-34, 4.19-45, 4.19-63, 4.20-4, 4.20-29, 4.20-30, 4.20-34, 4.20-38, 4.20-49, 4.20-50, 4.21-18, 4.21-47, 4.22-4, 4.22-17, 4.23-6, 4.23-18, 4.23-22, 4.23-23, 4.23-24, 4.23-41, 4.23-45, 4.23-48, 4.23-79, 4.23-80, 4.24-2, 4.24-6, 5-5, 5-6
Pit Lake	ES-23, ES-29, ES-30, ES-32, 2-8, 2-9, 2-10, 2-9, 2-10, 2-24, 2-27, 2-39, 2-46, 2-72, 2-73, 2-85, 2-86, 2-102, 2-108, 2-114, 2-147, 2-153, 2-154, 2-156, 3.2-16, 3.8-4, 3.8-8, 3.8-9, 3.11-24, 3.11-25, 3.11-26, 3.12-10, 3.12-16, 3.12-17, 3.12-22, 3.12-23, 3.12-24, 3.12-25, 3.12-30, 3.12-31, 3.12-32, 3.12-37, 3.12-40, 3.12-44, 3.12-48, 3.12-51, 3.12-55, 3.12-62, 3.12-75, 3.12-76, 3.12-77, 3.12-79, 3.12-81, 3.12-85, 3.12-90, 3.12-98, 3.18-13, 4.2-9, 4.3-44, 4.4-11, 4.4-13, 4.5-8, 4.5-15, 4.5-45, 4.5-46, 4.5-47, 4.8-11, 4.8-12, 4.8-20, 4.8-41, 4.8-42, 4.8-44, 4.8-49, 4.8-53, 4.8-54, 4.8-55, 4.8-59, 4.8-60, 4.8-63, 4.8-66, 4.8-67, 4.8-68, 4.8-69, 4.9-2, 4.9-6, 4.9-7, 4.9-13, 4.9-14, 4.9-15, 4.9-16, 4.9-27, 4.9-28, 4.9-29, 4.9-30, 4.9-33, 4.9-34, 4.9-36, 4.9-41, 4.9-60, 4.9-62, 4.9-70, 4.9-71, 4.9-72, 4.9-75, 4.9-76, 4.9-78, 4.9-80, 4.9-83, 4.9-84, 4.9-93, 4.9-101, 4.9-102, 4.9-107, 4.9-133, 4.9-134, 4.9-136, 4.9-145, 4.9-146, 4.10-5, 4.10-46, 4.10-47, 4.11-21, 4.11-30, 4.12-2, 4.12-3, 4.12-7, 4.12-8, 4.12-9, 4.12-13, 4.12-17, 4.12-19, 4.12-41, 4.12-43, 4.12-44, 4.12-46, 4.12-47, 4.12-48, 4.12-61, 4.12-63, 4.12-68, 4.12-72, 4.12-74, 4.12-76, 4.12-77, 4.12-81, 4.12-83, 4.12-84, 4.12-85, 4.12-86, 4.12-87, 4.12-88, 4.12-91, 4.12-95, 4.12-100, 4.12-102, 4.12-103, 4.12-104, 4.12-109, 4.12-111, 4.12-112, 4.12-113, 4.12-117, 4.12-118, 4.12-119, 4.12-124, 4.12-125, 4.12-130, 4.12-131, 4.12-133, 4.12-137, 4.12-138, 4.12-140, 4.12-148, 4.12-159, 4.12-165, 4.12-172, 4.12-174, 4.12-176, 4.12-178, 4.12-180, 4.12-182, 4.12-184, 4.12-185, 4.12-186, 4.12-187, 4.12-189, 4.12-190, 4.12-191, 4.12-197, 4.12-201, 4.12-203, 4.13-5, 4.19-68, 4.20-9, 4.20-32
Post-mining Land Use	2-70, 2-74, 4.2-13, 4.4-13, 4.5-19, 4.9-56, 4.22-12
Preferred Alternative	2-26, 2-83, 3.10-6, 4.1-4, 4.9-8, 4.11-52
Programmatic Agreement (PA)	3.17-9, 4.17-2, 5-4
Proposed Action	ES-1, ES-7, ES-8, ES-11, ES-13, ES-20, 1-1, 1-6, 2-1, 2-15, 2-81, 3.4-3, 3.5-2, 3.8-4, 3.10-6, 3.12-7, 3.13-13, 3.15-1, 3.15-5, 3.15-9, 3.15-11, 3.17-3, 3.17-9, 3.24-6, 4.1-6, 4.1-19, 4.3-19, 4.4-26, 4.5-5, 4.7-6, 4.8-2, 4.8-10, 4.8-19, 4.8-21, 4.8-22, 4.8-23, 4.8-24, 4.8-30, 4.8-46, 4.8-50, 4.8-51, 4.8-52, 4.8-55, 4.8-56, 4.8-57, 4.8-58, 4.8-59, 4.8-72, 4.8-75, 4.9-2, 4.9-5, 4.9-6, 4.9-7, 4.9-37, 4.9-68, 4.9-143, 4.9-144, 4.9-145, 4.11-11, 4.12-9, 4.12-83, 4.12-196, 4.17-16, 4.17-18, 4.22-15, 4.23-8, 4.23-114, 4.24-8, 4.24-10, 5-1, 5-3, 5-5, 5-7
Public Access	ES-7, ES-13, ES-18, ES-32, ES-33, ES-34, ES-35, 1-11, 2-5, 2-11, 2-20, 2-21, 2-55, 2-56, 2-74, 2-84, 2-92, 2-95, 2-97, 2-98, 2-99, 2-101, 2-104, 2-111, 2-112, 2-119, 2-124, 2-129, 2-130, 2-134, 2-136,

Public Access (continued)	2-137, 2-141, 2-142, 2-156, 2-157, 2-158, 2-159, 3.3-2, 3.16-15, 3.17-4, 3.21-21, 4.2-15, 4.2-17, 4.3-3, 4.3-49, 4.3-53, 4.3-59, 4.3-60, 4.3-61, 4.3-62, 4.3-70, 4.4-14, 4.4-17, 4.4-21, 4.4-22, 4.4-23, 4.5-33, 4.5-34, 4.5-37, 4.5-48, 4.6-41, 4.6-42, 4.6-44, 4.6-55, 4.9-48, 4.9-87, 4.9-116, 4.10-28, 4.10-47, 4.11-23, 4.11-31, 4.11-41, 4.11-60, 4.11-61, 4.13-43, 4.13-70, 4.13-83, 4.13-88, 4.13-92, 4.14-7, 4.15-3, 4.15-4, 4.15-8, 4.15-10, 4.15-15, 4.15-19, 4.16-2, 4.16-4, 4.16-7, 4.16-8, 4.16-9, 4.16-12, 4.16-14, 4.16-16, 4.16-17, 4.16-18, 4.16-19, 4.16-20, 4.16-22, 4.16-25, 4.16-26, 4.16-27, 4.16-28, 4.16-31, 4.16-32, 4.17-2, 4.17-3, 4.17-4, 4.17-5, 4.17-8, 4.17-9, 4.17-10, 4.17-11, 4.17-12, 4.17-13, 4.17-15, 4.17-17, 4.17-18, 4.17-24, 4.18-15, 4.18-16, 4.18-27, 4.18-28, 4.18-29, 4.18-33, 4.18-34, 4.19-16, 4.19-17, 4.19-23, 4.19-26, 4.19-29, 4.19-38, 4.19-39, 4.19-40, 4.19-41, 4.19-42, 4.19-45, 4.19-46, 4.19-48, 4.19-49, 4.19-50, 4.19-51, 4.19-53, 4.19-54, 4.19-55, 4.19-56, 4.19-57, 4.19-58, 4.19-59, 4.19-61, 4.19-68, 4.19-71, 4.19-72, 4.20-33, 4.20-34, 4.20-41, 4.20-42, 4.20-45, 4.20-55, 4.21-36, 4.21-37, 4.21-39, 4.21-40, 4.21-42, 4.21-43, 4.21-45, 4.22-7, 4.23-11, 4.23-12, 4.23-13, 4.23-14, 4.23-15, 4.23-16, 4.23-17, 4.23-18, 4.23-19, 4.23-20, 4.23-21, 4.23-53, 4.23-56, 4.23-58, 4.23-59, 4.23-78, 4.23-85, 4.23-86, 4.23-88, 4.24-1, 4.24-7, 4.24-9, 4.24-12
Public Health	2-84, 3.3-1, 3.3-6, 3.4-15, 3.6-5, 3.6-6, 3.7-1, 3.10-39, 3.18-1, 3.18-2, 3.18-3, 3.18-4, 3.18-6, 3.18-10, 3.18-11, 3.18-12, 3.18-13, 3.18-14, 3.18-16, 3.18-17, 3.21-17, 4.1-5, 4.3-27, 4.4-15, 4.4-20, 4.4-21, 4.4-22, 4.4-23, 4.4-31, 4.5-5, 4.16-3, 4.16-13, 4.16-22, 4.18-1, 4.18-2, 4.18-3, 4.18-4, 4.18-5, 4.18-13, 4.18-14, 4.18-15, 4.18-16, 4.18-17, 4.18-18, 4.18-20, 4.18-21, 4.18-22, 4.18-23, 4.18-24, 4.18-25, 4.18-26, 4.18-27, 4.18-28, 4.18-29, 4.18-30, 4.18-31, 4.18-33, 4.18-34, 4.18-35, 4.18-34, 4.19-7, 4.19-53, 4.22-2
Public Participation	1-2, 1-8, 3.15-2, 5-5
Purpose and Need	ES-5, ES-8, 1-2, 1-5, 1-7, 2-1, 2-2, 2-139, 2-140, 2-141, 2-142, 2-143, 2-144, 2-145, 2-146, 4.1-17
Rapid Infiltration Basin	2-8, 2-48, 2-108, 3.9-14, 4.1-3, 4.1-4, 4.4-20, 4.8-11, 4.9-1, 4.9-24, 4.9-67, 4.9-94, 4.9-113, 4.11-12, 4.11-13, 4.11-23, 4.11-32, 4.11-41, 4.11-61, 4.11-62, 4.12-8
Reclamation	ES-2, ES-5, ES-7, ES-13, ES-14, ES-17, ES-18, ES-21, ES-32, ES-33, 1-1, 1-2, 1-5, 1-6, 1-7, 1-11, 2-3, 2-5, 2-9, 2-12, 2-13, 2-20, 2-27, 2-38, 2-60, 2-69, 2-70, 2-71, 2-72, 2-73, 2-74, 2-75, 2-76, 2-78, 2-79, 2-80, 2-86, 2-91, 2-115, 2-123, 2-133, 2-143, 2-144, 2-146, 2-156, 2-157, 3.1-1, 3.2-3, 3.2-4, 3.2-16, 3.4-11, 3.5-1, 3.5-2, 3.5-3, 3.5-9, 3.5-16, 3.5-20, 3.5-22, 3.7-12, 3.7-14, 3.11-1, 3.11-15, 3.12-63, 3.12-85, 3.14-1, 3.14-6, 3.14-17, 3.15-1, 3.15-5, 3.15-7, 3.15-8, 3.15-10, 3.15-11, 3.15-12, 3.16-5, 3.18-7, 3.18-11, 3.18-14, 3.20-5, 3.21-5, 3.21-18, 4.1-4, 4.1-8, 4.1-9, 4.1-11, 4.2-3, 4.2-6, 4.2-12, 4.2-16, 4.2-18, 4.2-19, 4.2-20, 4.2-21, 4.2-22, 4.2-23, 4.3-61, 4.3-63, 4.3-68, 4.4-5, 4.4-10, 4.4-11, 4.4-12, 4.4-13, 4.4-14, 4.4-15, 4.4-17, 4.4-20, 4.4-21, 4.4-23, 4.4-25, 4.4-29, 4.5-1, 4.5-5, 4.5-6, 4.5-8, 4.5-9, 4.5-10, 4.5-15, 4.5-17, 4.5-18, 4.5-19, 4.5-20, 4.5-21, 4.5-22, 4.5-23, 4.5-24, 4.5-25, 4.5-26, 4.5-27, 4.5-28, 4.5-29, 4.5-33, 4.5-37, 4.5-42, 4.5-43, 4.5-44, 4.5-45, 4.5-46, 4.5-47, 4.5-48, 4.5-49, 4.5-51, 4.5-52, 4.6-30, 4.6-33, 4.6-52, 4.7-4, 4.7-11, 4.7-13, 4.7-15, 4.7-17, 4.8-10, 4.8-12, 4.8-13, 4.8-64, 4.8-65, 4.8-66, 4.9-8, 4.9-41, 4.9-79, 4.9-116, 4.9-118, 4.9-122, 4.9-127, 4.9-133, 4.9-134, 4.10-4, 4.10-41, 4.10-42,

Reclamation (continued)	<p>4.10-46, 4.11-6, 4.11-9, 4.11-13, 4.11-23, 4.11-30, 4.11-32, 4.11-40, 4.11-49, 4.11-53, 4.11-56, 4.11-57, 4.11-61, 4.11-69, 4.12-9, 4.12-9, 4.12-11, 4.12-30, 4.12-39, 4.12-46, 4.12-50, 4.12-60, 4.12-93, 4.12-104, 4.12-118, 4.12-125, 4.12-131, 4.12-136, 4.12-187, 4.12-188, 4.12-190, 4.12-192, 4.12-194, 4.12-203, 4.13-13, 4.13-44, 4.13-86, 4.13-107, 4.13-108, 4.13-110, 4.13-111, 4.13-112, 4.13-115, 4.14-3, 4.14-5, 4.14-10, 4.14-11, 4.14-16, 4.14-18, 4.15-1, 4.15-2, 4.15-5, 4.15-6, 4.15-7, 4.15-8, 4.15-9, 4.15-11, 4.15-12, 4.15-13, 4.15-14, 4.15-16, 4.15-17, 4.15-18, 4.15-19, 4.15-20, 4.15-21, 4.15-22, 4.15-23, 4.15-24, 4.16-7, 4.16-10, 4.16-11, 4.16-16, 4.16-17, 4.16-18, 4.16-21, 4.16-25, 4.16-27, 4.16-28, 4.17-9, 4.17-13, 4.17-14, 4.17-16, 4.17-17, 4.17-18, 4.17-19, 4.18-6, 4.18-7, 4.18-16, 4.18-17, 4.18-18, 4.18-19, 4.18-20, 4.18-21, 4.18-22, 4.18-27, 4.18-28, 4.18-29, 4.18-30, 4.18-31, 4.18-33, 4.18-35, 4.19-2, 4.19-3, 4.19-4, 4.19-5, 4.19-7, 4.19-9, 4.19-10, 4.19-16, 4.19-21, 4.19-22, 4.19-23, 4.19-24, 4.19-25, 4.19-26, 4.19-28, 4.19-29, 4.19-33, 4.19-38, 4.19-39, 4.19-40, 4.19-43, 4.19-44, 4.19-48, 4.19-49, 4.19-50, 4.19-51, 4.19-53, 4.19-54, 4.19-55, 4.19-57, 4.19-58, 4.19-59, 4.19-61, 4.19-63, 4.19-65, 4.19-66, 4.19-68, 4.19-71, 4.19-72, 4.19-73, 4.20-5, 4.20-7, 4.20-8, 4.20-9, 4.20-16, 4.20-30, 4.20-33, 4.20-35, 4.20-38, 4.20-41, 4.20-49, 4.20-50, 4.20-51, 4.21-10, 4.21-11, 4.21-28, 4.21-29, 4.21-30, 4.21-31, 4.21-32, 4.21-33, 4.21-35, 4.21-38, 4.21-41, 4.21-44, 4.21-46, 4.21-48, 4.21-49, 4.21-50, 4.22-3, 4.22-5, 4.22-11, 4.22-12, 4.22-13, 4.22-15, 4.23-5, 4.23-7, 4.23-9, 4.23-10, 4.23-18, 4.23-27, 4.23-28, 4.23-33, 4.23-38, 4.23-39, 4.23-43, 4.23-49, 4.23-50, 4.23-64, 4.23-70, 4.23-76, 4.23-77, 4.23-78, 4.23-79, 4.23-81, 4.23-83, 4.23-84, 4.24-4, 4.24-7, 4.24-9, 4.24-12</p>
Recreation	<p>2-37, 2-70, 2-84, 2-141, 3.4-16, 3.6-8, 3.8-32, 3.9-45, 3.11-1, 3.11-12, 3.11-23, 3.11-30, 3.12-9, 3.12-75, 3.13-7, 3.13-26, 3.13-27, 3.13-82, 3.14-7, 3.14-18, 3.15-6, 3.15-11, 3.15-12, 3.16-6, 3.16-7, 3.16-12, 3.17-16, 3.18-10, 3.18-13, 3.18-18, 3.19-1, 3.19-2, 3.19-3, 3.19-4, 3.19-5, 3.19-6, 3.19-7, 3.19-8, 3.19-10, 3.19-11, 3.19-12, 3.19-13, 3.19-14, 3.20-2, 3.20-5, 3.20-8, 3.20-9, 3.20-10, 3.21-1, 3.21-5, 3.21-12, 3.21-14, 3.21-17, 3.21-21, 3.21-22, 3.23-2, 3.23-5, 3.23-6, 3.23-9, 3.23-15, 3.23-17, 3.23-25, 3.23-26, 3.23-27, 3.23-31, 3.23-35, 3.23-37, 3.23-38, 3.23-39, 3.23-42, 3.23-46, 3.23-47, 4.1-7, 4.1-11, 4.1-12, 4.1-17, 4.3-43, 4.3-63, 4.3-66, 4.4-15, 4.4-16, 4.4-20, 4.4-22, 4.4-23, 4.4-25, 4.4-27, 4.4-28, 4.6-13, 4.6-26, 4.6-33, 4.6-36, 4.6-38, 4.6-40, 4.6-42, 4.6-44, 4.6-45, 4.6-46, 4.6-48, 4.6-49, 4.6-51, 4.9-45, 4.9-52, 4.9-55, 4.9-120, 4.10-43, 4.10-44, 4.11-55, 4.12-193, 4.12-195, 4.13-16, 4.13-17, 4.13-107, 4.15-3, 4.15-4, 4.15-8, 4.15-11, 4.15-16, 4.15-20, 4.15-21, 4.15-22, 4.16-3, 4.16-4, 4.16-12, 4.16-18, 4.17-17, 4.18-19, 4.18-24, 4.18-25, 4.18-29, 4.18-34, 4.19-1, 4.19-2, 4.19-3, 4.19-4, 4.19-5, 4.19-6, 4.19-7, 4.19-8, 4.19-9, 4.19-10, 4.19-11, 4.19-12, 4.19-13, 4.19-14, 4.19-15, 4.19-16, 4.19-17, 4.19-18, 4.19-19, 4.19-20, 4.19-21, 4.19-22, 4.19-23, 4.19-24, 4.19-25, 4.19-29, 4.19-34, 4.19-35, 4.19-36, 4.19-37, 4.19-38, 4.19-39, 4.19-40, 4.19-41, 4.19-42, 4.19-43, 4.19-44, 4.19-45, 4.19-47, 4.19-48, 4.19-49, 4.19-50, 4.19-51, 4.19-52, 4.19-53, 4.19-54, 4.19-55, 4.19-56, 4.19-57, 4.19-58, 4.19-59, 4.19-60, 4.19-61, 4.19-62, 4.19-63, 4.19-64, 4.19-65, 4.19-66, 4.19-67, 4.19-68, 4.19-69, 4.19-71, 4.19-72, 4.19-73, 4.20-2, 4.20-10, 4.20-12, 4.20-13, 4.20-17, 4.20-19, 4.20-50, 4.21-12, 4.21-19, 4.21-20, 4.21-27, 4.21-28, 4.21-35, 4.21-36, 4.21-37, 4.21-39, 4.21-40, 4.21-41, 4.21-43, 4.21-44, 4.21-45, 4.21-47, 4.21-48, 4.21-50, 4.21-55, 4.22-3, 4.22-14, 4.22-15,</p>

Recreation (continued)	4.23-1, 4.23-2, 4.23-3, 4.23-5, 4.23-9, 4.23-10, 4.23-11, 4.23-12, 4.23-13, 4.23-14, 4.23-15, 4.23-16, 4.23-17, 4.23-18, 4.23-19, 4.23-20, 4.23-21, 4.23-22, 4.23-23, 4.23-24, 4.23-25, 4.23-26, 4.23-30, 4.23-33, 4.23-34, 4.23-35, 4.23-37, 4.23-40, 4.23-41, 4.23-45, 4.23-46, 4.23-47, 4.23-51, 4.23-52, 4.23-54, 4.23-56, 4.23-57, 4.23-59, 4.23-61, 4.23-63, 4.23-64, 4.23-65, 4.23-66, 4.23-69, 4.23-75, 4.23-77, 4.23-78, 4.23-79, 4.23-80, 4.23-81, 4.23-82, 4.23-83, 4.23-84, 4.23-85, 4.23-86, 4.23-87, 4.23-88, 4.24-7
Revegetation	2-69, 2-73, 2-75, 3.5-22, 3.11-23, 3.12-79, 3.16-1, 4.4-8, 4.4-11, 4.4-12, 4.4-25, 4.5-9, 4.5-17, 4.5-24, 4.5-27, 4.5-49, 4.5-52, 4.10-5, 4.10-9, 4.10-46, 4.11-8, 4.11-53, 4.14-10, 4.14-11, 4.20-7, 4.20-9, 4.20-41, 4.20-51, 4.21-35, 4.23-5, 4.23-18, 4.23-76, 4.24-5, 4.24-13
Riparian	ES-7, ES-27, ES-28, 1-11, 2-43, 2-65, 2-72, 2-73, 2-84, 2-85, 2-86, 2-119, 2-130, 2-151, 2-152, 3.3-16, 3.3-26, 3.4-9, 3.4-13, 3.10-10, 3.10-11, 3.10-12, 3.10-13, 3.10-18, 3.10-20, 3.11-1, 3.11-2, 3.11-13, 3.11-14, 3.11-15, 3.11-16, 3.11-20, 3.11-21, 3.11-23, 3.12-7, 3.12-18, 3.12-31, 3.12-66, 3.12-69, 3.12-72, 3.12-75, 3.12-76, 3.12-80, 3.12-84, 3.13-1, 3.13-5, 3.13-6, 3.13-8, 3.13-12, 3.13-17, 3.13-20, 3.13-54, 3.13-61, 3.13-73, 3.13-77, 3.13-85, 3.13-86, 3.13-87, 3.13-88, 3.13-89, 3.13-91, 3.13-93, 3.15-12, 3.20-6, 3.20-7, 3.20-8, 3.23-26, 3.23-45, 3.23-48, 4.1-4, 4.1-18, 4.2-6, 4.4-13, 4.4-20, 4.4-22, 4.4-24, 4.4-31, 4.8-1, 4.8-30, 4.9-37, 4.9-38, 4.9-52, 4.9-79, 4.9-119, 4.10-12, 4.10-13, 4.10-22, 4.10-24, 4.10-30, 4.10-36, 4.10-50, 4.10-52, 4.11-1, 4.11-2, 4.11-5, 4.11-7, 4.11-8, 4.11-9, 4.11-10, 4.11-11, 4.11-12, 4.11-13, 4.11-14, 4.11-15, 4.11-16, 4.11-17, 4.11-21, 4.11-22, 4.11-24, 4.11-25, 4.11-26, 4.11-29, 4.11-30, 4.11-31, 4.11-33, 4.11-34, 4.11-35, 4.11-36, 4.11-39, 4.11-40, 4.11-42, 4.11-43, 4.11-44, 4.11-49, 4.11-51, 4.11-52, 4.11-53, 4.11-54, 4.11-55, 4.11-56, 4.11-57, 4.11-58, 4.11-59, 4.11-60, 4.11-61, 4.11-62, 4.11-64, 4.11-65, 4.11-66, 4.11-67, 4.11-68, 4.11-69, 4.11-71, 4.11-72, 4.12-8, 4.12-10, 4.12-12, 4.12-13, 4.12-28, 4.12-29, 4.12-58, 4.12-59, 4.12-102, 4.12-147, 4.12-148, 4.12-196, 4.13-55, 4.13-62, 4.13-66, 4.13-67, 4.13-70, 4.13-82, 4.13-85, 4.13-86, 4.13-87, 4.13-88, 4.13-89, 4.13-91, 4.13-93, 4.13-94, 4.13-95, 4.13-97, 4.13-102, 4.18-16, 4.20-7, 4.21-40, 4.21-43, 4.23-48, 4.23-54, 4.23-55, 4.23-57, 4.23-60
Scenic Resources	ES-34, 2-158, 3.4-16, 3.20-1, 3.20-3, 3.20-5, 3.20-6, 3.20-9, 3.20-11, 3.23-14, 4.4-16, 4.4-20, 4.4-22, 4.4-23, 4.16-3, 4.17-8, 4.20-1, 4.20-3, 4.20-4, 4.20-33, 4.20-44, 4.20-49, 4.20-50, 4.20-51, 4.20-55, 4.23-34, 4.23-51, 4.23-55, 4.23-58, 4.23-61
Scoping	ES-7, ES-8, ES-17, 1-10, 1-11, 2-2, 2-3, 3.24-13, 4.1-12, 4.1-17, 4.1-18, 4.17-1, 4.21-14, 4.21-28, 4.21-30, 4.24-1, 5-5, 5-6
Social and Economic Conditions	3.4-16, 3.18-14, 3.18-18, 3.21-1, 3.21-14, 3.24-1, 4.4-16, 4.4-20, 4.4-22, 4.4-23, 4.16-3, 4.18-21, 4.18-30, 4.19-3, 4.21-1, 4.21-3, 4.22-1
Soils	2-8, 2-55, 2-74, 3.2-28, 3.2-32, 3.2-33, 3.2-35, 3.2-36, 3.2-37, 3.2-38, 3.3-15, 3.3-16, 3.3-24, 3.4-5, 3.4-8, 3.4-11, 3.4-15, 3.5-1, 3.5-3, 3.5-7, 3.5-8, 3.5-9, 3.5-10, 3.5-15, 3.5-16, 3.5-17, 3.5-18, 3.5-19, 3.5-20, 3.5-22, 3.7-14, 3.9-14, 3.9-18, 3.9-42, 3.10-18, 3.10-21, 3.10-26, 3.10-27, 3.11-1, 3.11-15, 3.11-16, 3.11-20, 3.14-8, 3.17-4, 3.18-3, 3.18-6, 3.18-7, 3.18-9, 3.18-10, 3.18-11, 3.20-7, 4.2-8, 4.2-10, 4.2-21, 4.4-5, 4.4-10, 4.4-11, 4.4-12, 4.4-20, 4.4-21, 4.4-23, 4.5-

Soils (continued)	1, 4.5-5, 4.5-6, 4.5-7, 4.5-9, 4.5-10, 4.5-20, 4.5-21, 4.5-23, 4.5-24, 4.5-25, 4.5-26, 4.5-27, 4.5-28, 4.5-43, 4.5-44, 4.5-45, 4.5-46, 4.5-47, 4.5-49, 4.5-51, 4.5-52, 4.7-2, 4.7-10, 4.9-52, 4.9-54, 4.9-144, 4.10-46, 4.11-7, 4.11-11, 4.11-58, 4.12-57, 4.12-196, 4.13-34, 4.13-39, 4.13-47, 4.13-62, 4.13-87, 4.13-104, 4.14-11, 4.14-18, 4.17-16, 4.18-15, 4.18-16, 4.18-17, 4.18-18, 4.18-27, 4.18-29, 4.20-5, 4.20-9, 4.20-41, 4.23-9, 4.23-32, 4.23-49, 4.23-64, 4.23-69, 4.23-70, 4.23-71, 4.23-75, 4.23-76, 4.23-77, 4.23-79, 4.23-80, 4.23-81, 4.23-83, 4.24-7
Solid Waste	1-2, 2-8, 2-27, 2-32, 2-54, 2-55, 2-126, 3.4-7, 3.7-10, 3.18-17, 3.21-17, 3.21-19, 4.7-4, 4.7-8, 4.7-9, 4.7-15, 4.7-21
Special Status Species	3.4-14, 3.13-91
Stibnite Gold Logistics Facility	2-4, 2-9, 2-11, 2-22, 2-53, 2-57, 2-58, 2-63, 2-74, 3.5-20, 3.7-1, 3.11-3, 3.11-4, 3.17-4, 4.2-13, 4.5-19, 4.6-12, 4.6-15, 4.6-25, 4.6-33, 4.6-35, 4.6-37, 4.7-8, 4.7-10, 4.7-18, 4.7-21, 4.8-46, 4.9-56, 4.9-91, 4.9-110, 4.9-121, 4.9-124, 4.10-7, 4.11-6, 4.13-13, 4.13-14, 4.15-8, 4.16-8, 4.16-23, 4.17-7, 4.19-5, 4.20-2, 4.20-19, 4.20-22, 4.20-23, 4.20-27, 4.20-28, 4.20-29, 4.20-30, 4.20-37, 4.20-38, 4.22-3, 4.22-12, 4.23-6, 4.23-48
Surface Water	ES-7, ES-17, ES-23, ES-24, ES-25, ES-26, ES-28, ES-35, 1-11, 2-7, 2-9, 2-24, 2-25, 2-27, 2-28, 2-34, 2-37, 2-38, 2-46, 2-48, 2-69, 2-72, 2-73, 2-74, 2-76, 2-79, 2-80, 2-84, 2-85, 2-86, 2-110, 2-119, 2-120, 2-125, 2-130, 2-135, 2-143, 2-144, 2-147, 2-148, 2-149, 2-150, 2-152, 2-159, 3.2-24, 3.2-34, 3.3-15, 3.3-16, 3.3-24, 3.3-25, 3.3-26, 3.4-12, 3.4-14, 3.5-1, 3.5-20, 3.7-1, 3.7-14, 3.8-1, 3.8-3, 3.8-4, 3.8-5, 3.8-6, 3.8-13, 3.8-14, 3.8-15, 3.8-28, 3.8-30, 3.9-1, 3.9-3, 3.9-5, 3.9-6, 3.9-7, 3.9-8, 3.9-11, 3.9-12, 3.9-13, 3.9-14, 3.9-15, 3.9-16, 3.9-17, 3.9-18, 3.9-19, 3.9-21, 3.9-22, 3.9-23, 3.9-24, 3.9-25, 3.9-26, 3.9-28, 3.9-29, 3.9-31, 3.9-32, 3.9-33, 3.9-35, 3.9-37, 3.9-41, 3.9-42, 3.9-43, 3.9-44, 3.9-45, 3.9-46, 3.9-47, 3.9-49, 3.9-58, 3.9-59, 3.9-60, 3.11-1, 3.11-12, 3.11-16, 3.11-20, 3.11-29, 3.12-10, 3.12-89, 3.12-91, 3.12-98, 3.13-93, 3.18-2, 3.18-7, 3.18-10, 3.18-11, 3.18-12, 3.18-13, 3.23-7, 4.1-3, 4.2-9, 4.3-15, 4.3-58, 4.4-10, 4.4-11, 4.4-12, 4.4-17, 4.4-20, 4.4-21, 4.4-22, 4.4-24, 4.4-30, 4.4-31, 4.5-1, 4.5-27, 4.7-2, 4.7-3, 4.7-8, 4.7-10, 4.7-11, 4.7-12, 4.7-15, 4.7-19, 4.8-1, 4.8-2, 4.8-3, 4.8-10, 4.8-11, 4.8-12, 4.8-13, 4.8-15, 4.8-19, 4.8-20, 4.8-24, 4.8-25, 4.8-28, 4.8-40, 4.8-41, 4.8-42, 4.8-47, 4.8-48, 4.8-49, 4.8-53, 4.8-58, 4.8-59, 4.8-60, 4.8-63, 4.8-64, 4.8-65, 4.8-66, 4.8-67, 4.8-68, 4.8-69, 4.8-70, 4.9-1, 4.9-2, 4.9-3, 4.9-4, 4.9-5, 4.9-6, 4.9-7, 4.9-12, 4.9-13, 4.9-16, 4.9-17, 4.9-18, 4.9-19, 4.9-20, 4.9-23, 4.9-24, 4.9-25, 4.9-27, 4.9-28, 4.9-33, 4.9-34, 4.9-35, 4.9-36, 4.9-37, 4.9-38, 4.9-41, 4.9-42, 4.9-43, 4.9-45, 4.9-46, 4.9-48, 4.9-49, 4.9-50, 4.9-51, 4.9-53, 4.9-56, 4.9-57, 4.9-68, 4.9-69, 4.9-70, 4.9-71, 4.9-72, 4.9-73, 4.9-76, 4.9-77, 4.9-78, 4.9-79, 4.9-80, 4.9-83, 4.9-84, 4.9-85, 4.9-87, 4.9-88, 4.9-90, 4.9-91, 4.9-93, 4.9-97, 4.9-98, 4.9-99, 4.9-101, 4.9-102, 4.9-103, 4.9-104, 4.9-107, 4.9-108, 4.9-109, 4.9-110, 4.9-114, 4.9-115, 4.9-116, 4.9-117, 4.9-118, 4.9-119, 4.9-120, 4.9-121, 4.9-122, 4.9-123, 4.9-124, 4.9-125, 4.9-126, 4.9-127, 4.9-128, 4.9-129, 4.9-130, 4.9-131, 4.9-132, 4.9-133, 4.9-134, 4.9-135, 4.9-136, 4.9-137, 4.9-139, 4.9-140, 4.9-143, 4.9-144, 4.9-145, 4.11-1, 4.11-7, 4.11-9, 4.11-11, 4.11-21, 4.11-30, 4.11-39, 4.11-49, 4.11-57, 4.11-58, 4.11-68, 4.11-69, 4.11-72, 4.12-3, 4.12-11, 4.12-13, 4.12-26, 4.12-28, 4.12-30, 4.12-32, 4.12-33, 4.12-40, 4.12-44, 4.12-46, 4.12-48, 4.12-58, 4.12-81, 4.12-85, 4.12-95, 4.12-100, 4.12-102, 4.12-103, 4.12-104,

Surface Water (continued)	4.12-112, 4.12-113, 4.12-127, 4.12-134, 4.12-137, 4.12-138, 4.12-139, 4.12-145, 4.12-147, 4.12-149, 4.12-160, 4.12-174, 4.12-180, 4.12-198, 4.13-86, 4.16-10, 4.18-7, 4.18-13, 4.18-19, 4.18-20, 4.18-27, 4.18-28, 4.18-29, 4.18-33, 4.18-35, 4.21-36, 4.21-38, 4.21-39, 4.21-40, 4.21-42, 4.21-43, 4.21-46, 4.22-3, 4.23-13, 4.23-32, 4.23-33, 4.23-35, 4.23-50, 4.23-57, 4.23-58, 4.23-61
Tailings Storage Facility	ES-9, ES-13, ES-17, ES-23, ES-24, ES-25, ES-26, ES-28, ES-29, ES-32, ES-34, ES-35, 1-1, 1-5, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-10, 2-9, 2-10, 2-11, 2-19, 2-20, 2-25, 2-26, 2-27, 2-28, 2-31, 2-32, 2-33, 2-34, 2-35, 2-37, 2-38, 2-43, 2-46, 2-47, 2-51, 2-52, 2-53, 2-55, 2-63, 2-69, 2-72, 2-73, 2-75, 2-76, 2-85, 2-103, 2-104, 2-108, 2-110, 2-111, 2-114, 2-115, 2-116, 2-119, 2-120, 2-124, 2-125, 2-126, 2-129, 2-130, 2-135, 2-142, 2-143, 2-144, 2-145, 2-147, 2-148, 2-149, 2-150, 2-152, 2-153, 2-156, 2-158, 2-159, 3.2-1, 3.2-2, 3.2-3, 3.2-4, 3.2-19, 3.2-20, 3.2-31, 3.2-35, 3.2-36, 3.2-37, 3.9-5, 3.9-51, 3.9-52, 3.11-20, 3.12-61, 3.13-81, 4.1-4, 4.2-1, 4.2-4, 4.2-5, 4.2-6, 4.2-7, 4.2-8, 4.2-9, 4.2-10, 4.2-15, 4.2-16, 4.2-20, 4.2-21, 4.2-22, 4.2-23, 4.3-6, 4.3-7, 4.3-27, 4.3-58, 4.3-59, 4.3-73, 4.4-10, 4.4-11, 4.4-21, 4.4-22, 4.4-30, 4.5-7, 4.5-9, 4.5-10, 4.5-15, 4.5-21, 4.5-33, 4.5-45, 4.5-48, 4.6-3, 4.7-7, 4.7-14, 4.8-11, 4.8-13, 4.8-14, 4.8-15, 4.8-30, 4.8-38, 4.8-39, 4.8-41, 4.8-44, 4.8-50, 4.8-51, 4.8-52, 4.8-54, 4.8-55, 4.8-56, 4.8-57, 4.8-58, 4.8-59, 4.8-60, 4.8-61, 4.8-62, 4.8-63, 4.8-66, 4.8-67, 4.8-68, 4.8-69, 4.9-1, 4.9-5, 4.9-6, 4.9-8, 4.9-9, 4.9-10, 4.9-12, 4.9-13, 4.9-17, 4.9-19, 4.9-23, 4.9-27, 4.9-28, 4.9-33, 4.9-36, 4.9-41, 4.9-44, 4.9-46, 4.9-58, 4.9-59, 4.9-60, 4.9-61, 4.9-71, 4.9-78, 4.9-92, 4.9-97, 4.9-98, 4.9-101, 4.9-102, 4.9-104, 4.9-107, 4.9-108, 4.9-110, 4.9-113, 4.9-114, 4.9-129, 4.9-131, 4.9-132, 4.9-133, 4.9-134, 4.9-135, 4.9-139, 4.9-141, 4.10-28, 4.10-47, 4.11-6, 4.11-7, 4.11-8, 4.11-12, 4.11-14, 4.11-24, 4.11-30, 4.11-31, 4.11-33, 4.11-35, 4.11-41, 4.11-42, 4.11-52, 4.11-56, 4.11-58, 4.11-59, 4.11-60, 4.11-61, 4.11-62, 4.11-66, 4.11-69, 4.11-71, 4.12-4, 4.12-7, 4.12-9, 4.12-12, 4.12-13, 4.12-17, 4.12-18, 4.12-38, 4.12-39, 4.12-44, 4.12-47, 4.12-54, 4.12-63, 4.12-65, 4.12-67, 4.12-68, 4.12-69, 4.12-75, 4.12-76, 4.12-77, 4.12-81, 4.12-84, 4.12-85, 4.12-86, 4.12-87, 4.12-88, 4.12-91, 4.12-94, 4.12-96, 4.12-102, 4.12-103, 4.12-117, 4.12-118, 4.12-121, 4.12-123, 4.12-124, 4.12-125, 4.12-127, 4.12-130, 4.12-131, 4.12-132, 4.12-133, 4.12-134, 4.12-136, 4.12-137, 4.12-139, 4.12-140, 4.12-143, 4.12-147, 4.12-148, 4.12-149, 4.12-156, 4.12-160, 4.12-162, 4.12-164, 4.12-165, 4.12-166, 4.12-168, 4.12-169, 4.12-171, 4.12-172, 4.12-174, 4.12-176, 4.12-177, 4.12-178, 4.12-179, 4.12-180, 4.12-182, 4.12-183, 4.12-186, 4.12-187, 4.12-188, 4.12-189, 4.12-190, 4.12-191, 4.12-192, 4.12-195, 4.12-196, 4.12-197, 4.12-198, 4.12-201, 4.12-203, 4.13-4, 4.13-5, 4.13-6, 4.13-16, 4.13-21, 4.13-28, 4.13-32, 4.13-43, 4.13-63, 4.13-67, 4.13-111, 4.14-7, 4.14-10, 4.14-18, 4.15-3, 4.15-13, 4.15-14, 4.16-10, 4.16-18, 4.16-31, 4.16-32, 4.17-6, 4.17-9, 4.17-11, 4.17-12, 4.17-20, 4.17-21, 4.17-22, 4.17-23, 4.18-28, 4.18-30, 4.18-33, 4.18-35, 4.19-48, 4.19-49, 4.19-50, 4.20-2, 4.20-4, 4.20-6, 4.20-7, 4.20-8, 4.20-9, 4.20-24, 4.20-32, 4.20-38, 4.20-39, 4.20-40, 4.20-41, 4.20-42, 4.20-43, 4.20-51, 4.20-55, 4.21-39, 4.22-5, 4.22-9, 4.22-17, 4.23-14, 4.23-15, 4.23-16, 4.23-48, 4.23-49, 4.23-50, 4.23-51, 4.23-52, 4.23-55, 4.23-56, 4.23-57, 4.23-58, 4.23-59, 4.23-60, 4.23-61, 4.23-62, 4.23-66, 4.23-87, 4.24-3, 4.24-11, 4.24-12
Terrestrial Wildlife	3.13-5, 3.13-17, 4.1-19, 4.10-44, 4.11-55, 4.13-98, 4.13-108



Timber	1-9, 2-19, 3.2-28, 3.4-14, 3.4-16, 3.10-21, 3.11-16, 3.12-75, 3.12-80, 3.14-1, 3.14-3, 3.14-5, 3.14-6, 3.14-7, 3.14-8, 3.14-9, 3.14-11, 3.14-12, 3.14-13, 3.14-14, 3.14-15, 3.14-16, 3.14-17, 3.14-18, 3.14-19, 3.14-21, 3.14-22, 3.14-23, 3.15-1, 3.15-2, 3.15-6, 3.15-12, 3.16-14, 3.16-16, 3.17-17, 3.18-14, 3.21-5, 3.21-10, 3.21-12, 3.21-13, 3.23-26, 3.23-42, 3.24-6, 3.24-9, 4.1-7, 4.1-12, 4.1-17, 4.1-18, 4.3-64, 4.3-65, 4.4-14, 4.4-20, 4.4-22, 4.4-23, 4.4-28, 4.5-23, 4.6-51, 4.9-52, 4.9-119, 4.11-55, 4.13-107, 4.14-1, 4.14-2, 4.14-3, 4.14-4, 4.14-5, 4.14-6, 4.14-7, 4.14-8, 4.14-9, 4.14-10, 4.14-11, 4.14-12, 4.14-13, 4.14-14, 4.14-15, 4.14-16, 4.14-17, 4.14-18, 4.14-19, 4.14-21, 4.15-3, 4.15-8, 4.15-11, 4.15-16, 4.15-20, 4.15-21, 4.15-22, 4.15-23, 4.16-3, 4.16-23, 4.19-21, 4.20-50, 4.22-14, 4.22-15, 4.23-71, 4.23-77, 4.23-78
Transportation	ES-2, ES-32, ES-35, 1-9, 2-54, 2-57, 2-58, 2-141, 2-156, 2-159, 3.2-27, 3.2-31, 3.4-5, 3.4-6, 3.4-7, 3.4-15, 3.4-16, 3.7-1, 3.7-2, 3.7-5, 3.7-12, 3.8-32, 3.11-28, 3.12-64, 3.13-13, 3.13-93, 3.15-7, 3.16-1, 3.16-2, 3.16-3, 3.16-5, 3.16-6, 3.16-10, 3.16-11, 3.16-12, 3.16-14, 3.16-15, 3.16-16, 3.17-24, 3.18-1, 3.18-10, 3.18-11, 3.18-14, 3.18-15, 3.18-17, 3.18-19, 3.21-10, 3.21-11, 3.23-21, 3.23-22, 4.1-7, 4.1-10, 4.1-11, 4.1-13, 4.1-19, 4.3-8, 4.3-14, 4.3-19, 4.3-22, 4.4-9, 4.4-14, 4.4-15, 4.4-20, 4.4-22, 4.4-23, 4.4-26, 4.4-30, 4.5-23, 4.6-1, 4.6-8, 4.6-46, 4.7-2, 4.7-3, 4.7-4, 4.7-5, 4.7-8, 4.7-13, 4.7-16, 4.9-51, 4.9-56, 4.9-125, 4.10-43, 4.11-9, 4.11-54, 4.12-16, 4.12-21, 4.12-31, 4.12-68, 4.12-74, 4.12-94, 4.12-193, 4.12-194, 4.13-98, 4.13-107, 4.13-108, 4.14-13, 4.15-4, 4.16-1, 4.16-2, 4.16-3, 4.16-5, 4.16-8, 4.16-10, 4.16-12, 4.16-13, 4.16-14, 4.16-15, 4.16-17, 4.16-18, 4.16-19, 4.16-21, 4.16-22, 4.16-23, 4.16-24, 4.16-25, 4.16-26, 4.16-28, 4.16-29, 4.16-31, 4.17-16, 4.18-23, 4.18-34, 4.19-7, 4.19-53, 4.19-63, 4.21-1, 4.21-18, 4.21-19, 4.21-20, 4.21-26, 4.21-27, 4.21-35, 4.21-47, 4.21-48, 4.21-51, 4.21-55, 4.22-14, 4.22-15, 4.23-17, 4.23-374.24-7
Treaty Rights	3.24-7
Tribe	ES-7, 1-10, 3.3-2, 3.3-6, 3.12-9, 3.12-11, 3.12-16, 3.12-23, 3.12-24, 3.12-25, 3.12-63, 3.17-1, 3.17-3, 3.17-11, 3.17-13, 3.17-14, 3.17-24, 3.21-1, 3.21-13, 3.21-14, 3.21-17, 3.23-17, 3.24-1, 3.24-2, 3.24-5, 3.24-6, 3.24-7, 3.24-8, 3.24-9, 3.24-10, 3.24-11, 3.24-12, 3.24-13, 3.24-14, 4.1-4, 4.3-3, 4.17-2, 4.17-4, 4.17-20, 4.22-1, 4.22-2, 4.22-3, 4.22-4, 4.22-6, 4.22-7, 4.22-8, 4.22-9, 4.22-10, 4.22-11, 4.22-12, 4.22-13, 4.22-15, 4.22-16, 4.22-18, 4.24-1, 4.24-4, 4.24-5, 4.24-6, 4.24-8, 4.24-12, 4.24-13, 5-3, 5-4
U.S. Army Corps of Engineers	ES-1, ES-5, ES-6, ES-8, 1-2, 1-7, 1-9, 2-1, 2-83, 3.8-4, 3.9-12, 3.9-13, 3.9-14, 3.11-11, 3.11-20, 3.11-28, 3.12-7, 3.12-9, 3.17-10, 4.11-4, 4.11-7, 4.11-11, 4.11-50, 4.11-51, 4.11-53, 4.11-58, 5-1, 5-4, 5-5
U.S. Fish and Wildlife Service	1-9, 2-79, 3.3-2, 3.4-14, 3.10-1, 3.10-9, 3.10-23, 3.12-7, 3.12-8, 3.12-41, 3.12-42, 3.12-50, 3.12-51, 3.12-84, 3.12-91, 3.12-92, 3.13-13, 3.13-14, 3.13-15, 3.13-18, 3.13-20, 3.13-21, 3.13-24, 3.13-25, 3.13-54, 3.13-81, 3.13-86, 3.13-91, 3.13-92, 4.10-2, 4.10-8, 4.12-2, 4.12-3, 4.12-15, 4.12-20, 4.12-43, 4.12-50, 4.12-84, 4.12-87, 4.12-132, 4.12-178, 4.12-191, 4.13-12, 4.13-15, 4.13-108, 5-2, 5-6
Utilities	ES-9, ES-13, ES-14, ES-17, ES-18, ES-25, ES-34, 2-8, 2-9, 2-12, 2-56, 2-86, 2-91, 2-119, 2-123, 2-124, 2-130, 2-133, 2-134, 2-139, 2-149, 2-158, 3.1-1, 3.1-2, 3.5-20, 3.6-2, 3.8-3, 3.9-45, 3.11-23, 3.15-

Utilities (continued)	1, 3.15-7, 3.15-8, 3.15-10, 3.18-14, 3.18-15, 3.20-6, 3.21-10, 3.21-11, 3.21-17, 3.21-19, 4.2-12, 4.2-13, 4.2-15, 4.2-16, 4.2-18, 4.3-3, 4.4-13, 4.4-14, 4.6-2, 4.6-3, 4.6-9, 4.6-25, 4.6-32, 4.6-35, 4.6-37, 4.6-39, 4.6-41, 4.6-43, 4.6-44, 4.6-50, 4.7-8, 4.9-52, 4.9-54, 4.9-55, 4.9-89, 4.9-110, 4.9-120, 4.9-124, 4.9-134, 4.9-135, 4.9-140, 4.10-10, 4.10-11, 4.10-13, 4.10-18, 4.10-20, 4.10-21, 4.10-22, 4.10-23, 4.10-26, 4.10-28, 4.10-29, 4.10-30, 4.10-32, 4.10-34, 4.10-35, 4.10-36, 4.10-39, 4.10-41, 4.11-14, 4.11-15, 4.11-24, 4.11-25, 4.11-33, 4.11-34, 4.11-39, 4.11-41, 4.11-43, 4.11-62, 4.11-63, 4.11-64, 4.12-15, 4.12-20, 4.12-23, 4.13-4, 4.13-8, 4.13-9, 4.13-11, 4.13-12, 4.13-13, 4.13-14, 4.13-15, 4.13-19, 4.13-21, 4.13-23, 4.13-24, 4.13-25, 4.13-26, 4.13-27, 4.13-29, 4.13-30, 4.13-31, 4.13-32, 4.13-33, 4.13-35, 4.13-36, 4.13-37, 4.13-40, 4.13-41, 4.13-42, 4.13-44, 4.13-45, 4.13-46, 4.13-49, 4.13-50, 4.13-53, 4.13-54, 4.13-56, 4.13-57, 4.13-58, 4.13-59, 4.13-60, 4.13-61, 4.13-63, 4.13-64, 4.13-65, 4.13-67, 4.13-68, 4.13-69, 4.13-71, 4.13-72, 4.13-73, 4.13-75, 4.13-77, 4.13-78, 4.13-79, 4.13-81, 4.13-82, 4.13-84, 4.13-85, 4.13-88, 4.13-89, 4.13-90, 4.13-91, 4.13-93, 4.13-95, 4.13-96, 4.13-99, 4.13-101, 4.13-105, 4.13-108, 4.13-109, 4.13-112, 4.13-115, 4.13-116, 4.14-8, 4.14-9, 4.14-18, 4.15-1, 4.15-2, 4.15-5, 4.15-8, 4.15-9, 4.15-11, 4.15-13, 4.15-14, 4.15-16, 4.15-17, 4.15-18, 4.15-20, 4.15-22, 4.15-23, 4.15-24, 4.15-27, 4.17-4, 4.17-5, 4.17-6, 4.17-10, 4.17-13, 4.17-15, 4.18-1, 4.18-22, 4.18-24, 4.18-29, 4.20-3, 4.20-17, 4.20-19, 4.20-22, 4.20-28, 4.20-35, 4.20-36, 4.20-37, 4.20-43, 4.20-44, 4.20-48, 4.20-55, 4.21-15, 4.21-19, 4.21-48, 4.22-2, 4.23-6, 4.23-19, 4.23-46, 4.23-47, 4.23-49, 4.23-51, 4.23-53, 4.23-60, 4.23-66
Vegetation	ES-26, ES-34, 2-19, 2-20, 2-22, 2-73, 2-75, 2-79, 2-103, 2-150, 2-158, 3.2-11, 3.2-25, 3.2-27, 3.3-7, 3.3-13, 3.3-16, 3.3-24, 3.4-10, 3.4-13, 3.4-15, 3.5-1, 3.5-2, 3.5-15, 3.5-21, 3.6-7, 3.7-1, 3.8-6, 3.8-21, 3.9-42, 3.10-1, 3.10-2, 3.10-7, 3.10-8, 3.10-9, 3.10-10, 3.10-12, 3.10-13, 3.10-14, 3.10-15, 3.10-18, 3.10-19, 3.10-20, 3.10-21, 3.10-22, 3.10-24, 3.10-26, 3.10-27, 3.10-39, 3.11-1, 3.11-13, 3.11-14, 3.11-15, 3.11-16, 3.11-19, 3.11-21, 3.11-23, 3.11-25, 3.12-8, 3.12-75, 3.12-78, 3.12-80, 3.13-7, 3.13-16, 3.13-17, 3.13-22, 3.13-26, 3.13-30, 3.13-36, 3.13-46, 3.13-77, 3.13-81, 3.13-82, 3.13-86, 3.13-87, 3.14-6, 3.14-7, 3.14-8, 3.14-9, 3.14-15, 3.14-17, 3.14-18, 3.18-7, 3.18-14, 3.20-1, 3.20-7, 3.20-8, 3.21-12, 3.23-7, 3.23-16, 3.23-37, 3.23-47, 3.24-2, 3.24-14, 4.1-4, 4.1-7, 4.1-9, 4.1-17, 4.1-18, 4.2-9, 4.3-65, 4.4-10, 4.4-12, 4.4-14, 4.4-16, 4.4-17, 4.4-20, 4.4-21, 4.4-24, 4.4-25, 4.4-27, 4.4-31, 4.5-5, 4.5-8, 4.5-10, 4.5-19, 4.5-20, 4.5-22, 4.5-24, 4.5-26, 4.5-27, 4.5-28, 4.5-46, 4.5-47, 4.5-48, 4.5-51, 4.6-3, 4.6-25, 4.7-2, 4.7-11, 4.7-17, 4.8-30, 4.9-6, 4.9-37, 4.9-38, 4.9-48, 4.9-49, 4.9-52, 4.9-54, 4.9-55, 4.9-56, 4.9-57, 4.9-79, 4.9-90, 4.9-91, 4.9-104, 4.9-107, 4.9-119, 4.9-121, 4.9-126, 4.9-134, 4.10-1, 4.10-2, 4.10-3, 4.10-4, 4.10-5, 4.10-6, 4.10-7, 4.10-8, 4.10-9, 4.10-10, 4.10-11, 4.10-12, 4.10-13, 4.10-20, 4.10-22, 4.10-23, 4.10-28, 4.10-30, 4.10-31, 4.10-34, 4.10-35, 4.10-36, 4.10-37, 4.10-41, 4.10-42, 4.10-43, 4.10-44, 4.10-45, 4.10-46, 4.10-47, 4.10-48, 4.10-49, 4.10-50, 4.10-51, 4.10-55, 4.10-56, 4.10-57, 4.10-58, 4.11-7, 4.11-8, 4.11-11, 4.11-54, 4.11-58, 4.12-8, 4.12-10, 4.12-13, 4.12-22, 4.12-26, 4.12-28, 4.12-29, 4.12-30, 4.12-31, 4.12-32, 4.12-58, 4.12-66, 4.12-102, 4.12-147, 4.12-148, 4.12-194, 4.12-196, 4.13-2, 4.13-4, 4.13-6, 4.13-8, 4.13-28, 4.13-29, 4.13-34, 4.13-35, 4.13-36, 4.13-38, 4.13-39, 4.13-40, 4.13-44, 4.13-47, 4.13-48, 4.13-49, 4.13-51, 4.13-52, 4.13-53, 4.13-62, 4.13-63, 4.13-66, 4.13-67, 4.13-71, 4.13-73, 4.13-

Vegetation (continued)	74, 4.13-76, 4.13-80, 4.13-81, 4.13-82, 4.13-84, 4.13-87, 4.13-89, 4.13-91, 4.13-93, 4.13-94, 4.13-95, 4.13-97, 4.13-99, 4.13-102, 4.13-103, 4.13-104, 4.13-105, 4.13-106, 4.13-107, 4.13-108, 4.13-109, 4.13-110, 4.13-111, 4.14-2, 4.14-3, 4.14-4, 4.14-5, 4.14-6, 4.14-8, 4.14-9, 4.14-10, 4.14-11, 4.14-12, 4.14-13, 4.14-16, 4.14-18, 4.14-19, 4.16-4, 4.17-6, 4.17-8, 4.17-9, 4.17-16, 4.18-7, 4.18-16, 4.18-17, 4.18-27, 4.19-2, 4.19-7, 4.19-20, 4.19-21, 4.19-23, 4.19-36, 4.19-38, 4.19-44, 4.20-1, 4.20-2, 4.20-5, 4.20-6, 4.20-7, 4.20-8, 4.20-9, 4.20-10, 4.20-11, 4.20-12, 4.20-13, 4.20-14, 4.20-15, 4.20-16, 4.20-17, 4.20-18, 4.20-19, 4.20-21, 4.20-22, 4.20-23, 4.20-24, 4.20-25, 4.20-26, 4.20-27, 4.20-28, 4.20-29, 4.20-30, 4.20-31, 4.20-32, 4.20-34, 4.20-36, 4.20-37, 4.20-38, 4.20-39, 4.20-40, 4.20-41, 4.20-42, 4.20-43, 4.20-44, 4.20-45, 4.20-46, 4.20-47, 4.20-50, 4.20-55, 4.22-2, 4.23-4, 4.23-5, 4.23-6, 4.23-9, 4.23-10, 4.23-12, 4.23-15, 4.23-18, 4.23-22, 4.23-24, 4.23-25, 4.23-28, 4.23-29, 4.23-32, 4.23-33, 4.23-34, 4.23-42, 4.23-47, 4.23-48, 4.23-49, 4.23-50, 4.23-52, 4.23-53, 4.23-54, 4.23-55, 4.23-57, 4.23-58, 4.23-60, 4.23-63, 4.23-64, 4.23-65, 4.23-66, 4.23-68, 4.23-69, 4.23-70, 4.23-71, 4.23-75, 4.23-76, 4.23-77, 4.23-78, 4.23-79, 4.23-80, 4.23-81, 4.23-82, 4.23-83, 4.23-84, 4.23-85, 4.23-86, 4.23-88, 4.24-5, 4.24-7, 4.24-13
Viewshed	3.20-8, 3.20-10, 4.17-7, 4.17-8, 4.17-21, 4.17-23, 4.20-1, 4.20-2, 4.20-4, 4.20-8, 4.20-9, 4.20-13, 4.20-17, 4.20-19, 4.20-21, 4.20-24, 4.20-25, 4.20-28, 4.20-31, 4.20-33, 4.20-35, 4.20-36, 4.20-37, 4.20-38, 4.20-41, 4.20-42, 4.20-43, 4.20-44, 4.20-48, 4.20-49, 4.20-51, 4.23-51, 4.24-4
Visual Resources	3.20-1, 4.20-50
Water Quality	ES-7, ES-25, ES-28, ES-31, ES-35, 1-11, 2-13, 2-37, 2-38, 2-43, 2-46, 2-47, 2-85, 2-86, 2-110, 2-115, 2-116, 2-130, 2-149, 2-152, 2-155, 2-159, 3.4-10, 3.4-12, 3.4-15, 3.4-16, 3.5-1, 3.5-3, 3.8-32, 3.9-1, 3.9-5, 3.9-11, 3.9-12, 3.9-13, 3.9-14, 3.9-15, 3.9-16, 3.9-17, 3.9-18, 3.9-22, 3.9-24, 3.9-25, 3.9-31, 3.9-32, 3.9-41, 3.9-42, 3.9-45, 3.9-46, 3.9-49, 3.9-53, 3.9-58, 3.9-59, 3.9-60, 3.11-1, 3.11-11, 3.11-12, 3.11-13, 3.11-14, 3.11-15, 3.11-16, 3.11-21, 3.11-29, 3.11-30, 3.12-9, 3.12-10, 3.12-11, 3.12-17, 3.12-35, 3.12-42, 3.12-48, 3.12-63, 3.12-65, 3.12-67, 3.12-70, 3.12-75, 3.12-82, 3.12-89, 3.12-91, 3.12-92, 3.12-93, 3.13-86, 3.13-87, 3.18-11, 3.18-13, 3.23-7, 3.23-13, 3.23-15, 3.23-18, 3.23-21, 4.1-3, 4.1-4, 4.1-7, 4.1-9, 4.1-10, 4.2-9, 4.4-12, 4.4-15, 4.4-17, 4.4-20, 4.4-21, 4.4-22, 4.4-30, 4.4-31, 4.5-33, 4.6-39, 4.7-2, 4.7-17, 4.8-13, 4.8-46, 4.8-53, 4.8-54, 4.9-1, 4.9-2, 4.9-3, 4.9-4, 4.9-5, 4.9-6, 4.9-7, 4.9-12, 4.9-13, 4.9-16, 4.9-17, 4.9-18, 4.9-19, 4.9-20, 4.9-23, 4.9-24, 4.9-27, 4.9-28, 4.9-33, 4.9-34, 4.9-36, 4.9-41, 4.9-43, 4.9-46, 4.9-48, 4.9-49, 4.9-53, 4.9-54, 4.9-56, 4.9-58, 4.9-60, 4.9-67, 4.9-68, 4.9-69, 4.9-70, 4.9-71, 4.9-72, 4.9-78, 4.9-80, 4.9-83, 4.9-85, 4.9-87, 4.9-90, 4.9-91, 4.9-97, 4.9-98, 4.9-101, 4.9-102, 4.9-109, 4.9-113, 4.9-114, 4.9-117, 4.9-119, 4.9-123, 4.9-125, 4.9-126, 4.9-128, 4.9-129, 4.9-130, 4.9-131, 4.9-133, 4.9-134, 4.9-135, 4.9-136, 4.9-137, 4.9-139, 4.9-141, 4.9-143, 4.9-145, 4.10-20, 4.11-2, 4.11-7, 4.11-8, 4.11-11, 4.11-12, 4.11-21, 4.11-22, 4.11-30, 4.11-31, 4.11-39, 4.11-40, 4.11-49, 4.11-54, 4.11-55, 4.11-56, 4.11-68, 4.11-69, 4.11-72, 4.12-1, 4.12-14, 4.12-24, 4.12-30, 4.12-31, 4.12-39, 4.12-40, 4.12-41, 4.12-43, 4.12-44, 4.12-46, 4.12-47, 4.12-50, 4.12-94, 4.12-95, 4.12-103, 4.12-104, 4.12-115, 4.12-137, 4.12-138, 4.12-188, 4.12-203, 4.13-86, 4.18-1, 4.18-19, 4.18-33, 4.18-34, 4.18-33, 4.18-34, 4.18-35, 4.19-40, 4.21-36, 4.21-38, 4.21-

Water Quality (continued)	39, 4.21-40, 4.21-41, 4.21-42, 4.21-43, 4.21-46, 4.21-56, 4.22-3, 4.23-13, 4.23-23, 4.23-24, 4.23-27, 4.23-28, 4.23-29, 4.23-32, 4.23-33, 4.23-35, 4.23-37, 4.23-38, 4.23-39, 4.23-41, 4.23-43, 4.23-44, 4.23-48, 4.23-53, 4.23-55, 4.23-61, 4.23-63, 4.23-68, 4.23-87, 4.23-88, 4.24-4, 4.24-12
Water Resources	ES-24, ES-25, 2-77, 2-79, 2-148, 2-149, 3.2-4, 3.4-12, 3.8-4, 3.9-17, 3.11-12, 3.23-15, 4.5-1, 4.5-8, 4.5-52, 4.7-13, 4.7-19, 4.8-3, 4.8-13, 4.8-67, 4.8-73, 4.8-74, 4.9-1, 4.9-3, 4.9-131, 4.9-132, 4.9-139, 4.18-16, 4.18-17, 4.21-36, 4.21-38, 4.21-39, 4.21-41, 4.21-46
Water Rights	ES-23, ES-24, 2-46, 2-48, 2-52, 2-53, 2-147, 2-148, 3.8-1, 3.8-3, 3.8-4, 3.8-5, 3.8-6, 3.8-29, 3.8-30, 3.8-32, 3.9-1, 4.8-1, 4.8-12, 4.8-13, 4.8-46, 4.8-47, 4.8-48, 4.8-64, 4.8-70, 4.9-1
Water Supply	ES-24, 2-4, 2-19, 2-47, 2-148, 3.4-9, 3.4-12, 3.8-27, 3.8-28, 3.9-45, 3.9-53, 3.12-75, 3.18-12, 4.4-11, 4.4-12, 4.5-43, 4.6-50, 4.8-46, 4.8-47, 4.8-70, 4.9-45, 4.9-52, 4.9-55, 4.9-120, 4.9-122, 4.17-14, 4.18-19, 4.18-20, 4.21-47
Water Use	2-24, 2-28, 2-46, 2-47, 2-48, 2-51, 2-52, 2-53, 2-54, 2-108, 3.8-30, 3.18-12, 3.23-40, 4.8-47, 4.8-65, 4.18-20
Waters of the U.S.	ES-5, ES-6, ES-8, ES-17, 1-7, 1-9, 2-81, 2-83, 3.9-12, 3.9-13, 3.11-11, 3.11-12, 4.7-10, 4.9-45, 4.9-57, 4.9-136, 4.11-50
Wetlands	ES-5, ES-6, ES-7, ES-27, ES-28, 1-7, 1-9, 1-11, 2-65, 2-69, 2-75, 2-79, 2-83, 2-84, 2-85, 2-86, 2-116, 2-130, 2-151, 2-152, 3.2-11, 3.4-5, 3.4-13, 3.8-5, 3.8-6, 3.8-19, 3.8-29, 3.10-27, 3.10-33, 3.11-1, 3.11-2, 3.11-4, 3.11-11, 3.11-12, 3.11-13, 3.11-14, 3.11-15, 3.11-16, 3.11-19, 3.11-20, 3.11-21, 3.11-28, 3.11-29, 3.11-30, 3.12-7, 3.13-87, 3.13-88, 3.13-92, 3.23-45, 3.23-48, 4.1-2, 4.1-4, 4.3-67, 4.4-13, 4.4-20, 4.4-22, 4.4-24, 4.4-31, 4.5-20, 4.5-21, 4.5-25, 4.5-47, 4.8-1, 4.8-28, 4.8-30, 4.8-41, 4.9-28, 4.10-6, 4.10-16, 4.11-1, 4.11-2, 4.11-3, 4.11-4, 4.11-5, 4.11-7, 4.11-8, 4.11-9, 4.11-10, 4.11-11, 4.11-12, 4.11-13, 4.11-14, 4.11-15, 4.11-16, 4.11-17, 4.11-21, 4.11-22, 4.11-23, 4.11-24, 4.11-25, 4.11-26, 4.11-29, 4.11-30, 4.11-31, 4.11-33, 4.11-34, 4.11-35, 4.11-36, 4.11-39, 4.11-40, 4.11-42, 4.11-43, 4.11-44, 4.11-45, 4.11-49, 4.11-50, 4.11-51, 4.11-52, 4.11-53, 4.11-54, 4.11-55, 4.11-56, 4.11-57, 4.11-58, 4.11-59, 4.11-62, 4.11-63, 4.11-65, 4.11-66, 4.11-67, 4.11-68, 4.11-69, 4.11-71, 4.11-72, 4.12-12, 4.12-94, 4.13-1, 4.13-66, 4.13-67, 4.13-68, 4.13-86, 4.13-87, 4.13-88, 4.13-89, 4.13-91, 4.13-93, 4.13-94, 4.13-95, 4.13-99, 4.13-110, 4.13-115, 4.18-16, 4.21-40, 4.21-43, 4.23-48, 4.23-54, 4.23-57, 4.23-60
Wild and Scenic River	3.4-17, 3.8-5, 3.8-32, 3.15-2, 3.19-5, 3.20-9, 3.23-9, 3.23-11, 3.23-13, 3.23-14, 3.23-15, 3.23-16, 3.23-17, 3.23-19, 3.23-22, 3.23-23, 3.23-24, 3.23-26, 3.23-40, 4.4-17, 4.19-5, 4.23-27, 4.23-28, 4.23-30, 4.23-32, 4.23-33, 4.23-34, 4.23-35, 4.23-36, 4.23-38, 4.23-39, 4.23-40, 4.23-42, 4.23-43, 4.23-44, 4.23-53, 4.23-56, 4.23-62, 4.23-87
Wildlife	ES-27, ES-35, 2-34, 2-55, 2-56, 2-65, 2-70, 2-79, 2-82, 2-83, 2-151, 2-159, 3.3-16, 3.4-14, 3.6-1, 3.6-5, 3.7-1, 3.8-32, 3.10-6, 3.10-23, 3.10-26, 3.11-1, 3.11-11, 3.11-14, 3.11-20, 3.11-21, 3.11-28, 3.11-29, 3.11-30, 3.12-8, 3.12-9, 3.13-1, 3.13-2, 3.13-3, 3.13-5, 3.13-6, 3.13-7, 3.13-8, 3.13-14, 3.13-15, 3.13-16, 3.13-17, 3.13-18, 3.13-19, 3.13-25, 3.13-30, 3.13-31, 3.13-35, 3.13-37, 3.13-50, 3.13-54, 3.13-58, 3.13-61, 3.13-65, 3.13-69, 3.13-73, 3.13-77, 3.13-81, 3.13-82,

Wildlife (continued)	3.13-85, 3.13-86, 3.13-88, 3.13-89, 3.13-90, 3.13-91, 3.13-92, 3.13-93, 3.14-6, 3.16-14, 3.17-3, 3.19-2, 3.19-5, 3.19-14, 3.20-6, 3.20-8, 3.20-9, 3.23-7, 3.23-14, 3.23-15, 3.23-37, 3.23-45, 3.24-1, 3.24-2, 3.24-11, 3.24-12, 3.24-13, 3.24-14, 4.1-9, 4.1-10, 4.1-12, 4.1-17, 4.1-19, 4.3-16, 4.3-60, 4.4-3, 4.4-13, 4.4-15, 4.4-17, 4.4-20, 4.4-22, 4.4-24, 4.4-30, 4.4-31, 4.5-1, 4.5-5, 4.5-8, 4.5-52, 4.6-1, 4.7-2, 4.7-11, 4.7-17, 4.9-24, 4.10-3, 4.10-5, 4.10-8, 4.10-44, 4.10-47, 4.11-2, 4.11-5, 4.11-9, 4.11-10, 4.11-11, 4.11-12, 4.11-22, 4.11-31, 4.11-40, 4.11-55, 4.12-194, 4.13-1, 4.13-2, 4.13-3, 4.13-4, 4.13-5, 4.13-6, 4.13-7, 4.13-8, 4.13-9, 4.13-11, 4.13-14, 4.13-16, 4.13-17, 4.13-19, 4.13-20, 4.13-21, 4.13-22, 4.13-23, 4.13-25, 4.13-27, 4.13-28, 4.13-29, 4.13-31, 4.13-34, 4.13-35, 4.13-38, 4.13-39, 4.13-40, 4.13-41, 4.13-42, 4.13-43, 4.13-46, 4.13-47, 4.13-48, 4.13-49, 4.13-51, 4.13-53, 4.13-55, 4.13-58, 4.13-59, 4.13-61, 4.13-62, 4.13-66, 4.13-67, 4.13-69, 4.13-70, 4.13-71, 4.13-72, 4.13-73, 4.13-74, 4.13-75, 4.13-76, 4.13-79, 4.13-80, 4.13-81, 4.13-82, 4.13-83, 4.13-84, 4.13-85, 4.13-87, 4.13-88, 4.13-90, 4.13-91, 4.13-92, 4.13-93, 4.13-94, 4.13-95, 4.13-96, 4.13-97, 4.13-98, 4.13-99, 4.13-100, 4.13-101, 4.13-102, 4.13-103, 4.13-104, 4.13-105, 4.13-106, 4.13-107, 4.13-108, 4.13-109, 4.13-110, 4.13-111, 4.13-112, 4.13-113, 4.13-115, 4.13-116, 4.15-21, 4.15-22, 4.16-3, 4.16-10, 4.17-16, 4.18-17, 4.18-19, 4.18-27, 4.19-6, 4.19-7, 4.19-8, 4.19-10, 4.19-11, 4.19-12, 4.19-13, 4.19-14, 4.19-15, 4.19-18, 4.19-19, 4.19-21, 4.19-22, 4.19-23, 4.19-38, 4.19-39, 4.19-41, 4.19-43, 4.19-54, 4.19-55, 4.19-58, 4.19-63, 4.19-65, 4.19-66, 4.19-67, 4.19-73, 4.21-19, 4.21-27, 4.21-36, 4.21-38, 4.21-39, 4.21-40, 4.21-41, 4.21-42, 4.21-43, 4.21-44, 4.21-45, 4.21-46, 4.21-50, 4.21-56, 4.22-2, 4.22-3, 4.22-5, 4.22-12, 4.23-1, 4.23-3, 4.23-4, 4.23-6, 4.23-7, 4.23-11, 4.23-12, 4.23-13, 4.23-15, 4.23-16, 4.23-17, 4.23-18, 4.23-19, 4.23-22, 4.23-23, 4.23-24, 4.23-25, 4.23-26, 4.23-46, 4.23-47, 4.23-48, 4.23-49, 4.23-54, 4.23-55, 4.23-57, 4.23-60, 4.23-63, 4.23-64, 4.23-65, 4.23-66, 4.23-85, 4.23-86, 4.24-1, 4.24-2, 4.24-4, 4.24-5, 4.24-7, 4.24-10, 4.24-11, 4.24-12, 5-2
Yellow Pine Route	ES-18, ES-25, ES-28, ES-31, ES-32, ES-33, ES-34, 2-5, 2-20, 2-87, 2-130, 2-133, 2-134, 2-136, 2-149, 2-152, 2-155, 2-156, 2-157, 2-158, 3.2-26, 3.2-27, 3.2-28, 3.2-31, 3.6-8, 3.6-9, 3.7-1, 3.15-9, 3.15-11, 3.16-11, 3.16-16, 4.1-4, 4.2-12, 4.2-17, 4.2-22, 4.3-45, 4.3-60, 4.3-61, 4.3-62, 4.3-73, 4.4-22, 4.4-23, 4.4-24, 4.4-31, 4.5-37, 4.5-38, 4.5-41, 4.5-42, 4.5-48, 4.6-6, 4.6-8, 4.6-13, 4.6-14, 4.6-16, 4.6-17, 4.6-36, 4.6-46, 4.6-47, 4.6-48, 4.6-52, 4.6-55, 4.7-8, 4.7-11, 4.7-12, 4.7-13, 4.7-15, 4.7-18, 4.7-19, 4.7-22, 4.9-46, 4.9-47, 4.9-48, 4.9-50, 4.9-85, 4.9-86, 4.9-87, 4.9-88, 4.9-116, 4.9-117, 4.9-118, 4.9-119, 4.9-127, 4.9-135, 4.9-140, 4.10-34, 4.11-6, 4.11-39, 4.11-43, 4.11-49, 4.11-56, 4.11-69, 4.11-72, 4.12-2, 4.12-21, 4.12-22, 4.12-31, 4.12-74, 4.12-86, 4.12-99, 4.12-102, 4.12-143, 4.12-183, 4.12-184, 4.12-185, 4.12-187, 4.12-188, 4.12-189, 4.12-190, 4.12-192, 4.12-195, 4.12-199, 4.12-203, 4.12-204, 4.13-2, 4.13-3, 4.13-4, 4.13-8, 4.13-13, 4.13-18, 4.13-23, 4.13-29, 4.13-32, 4.13-35, 4.13-40, 4.13-44, 4.13-48, 4.13-52, 4.13-56, 4.13-63, 4.13-67, 4.13-71, 4.13-72, 4.13-75, 4.13-80, 4.13-84, 4.13-88, 4.13-92, 4.13-95, 4.13-96, 4.13-99, 4.13-101, 4.13-105, 4.13-113, 4.13-115, 4.14-5, 4.14-6, 4.14-7, 4.14-17, 4.14-19, 4.15-3, 4.15-4, 4.15-10, 4.15-15, 4.15-17, 4.15-19, 4.15-20, 4.16-4, 4.16-7, 4.16-12, 4.16-13, 4.16-16, 4.16-17, 4.16-18, 4.16-19, 4.16-20, 4.16-21, 4.16-22, 4.16-26, 4.16-27, 4.16-28, 4.16-31, 4.16-32, 4.17-12, 4.17-13, 4.17-20, 4.17-22, 4.17-23, 4.17-24,

## 9.0 INDEX

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Yellow Pine Route (continued)	4.18-21, 4.18-28, 4.18-33, 4.18-34, 4.19-7, 4.19-9, 4.19-26, 4.19-31, 4.19-34, 4.19-40, 4.19-53, 4.19-54, 4.19-55, 4.19-56, 4.19-57, 4.19-58, 4.19-59, 4.19-60, 4.19-61, 4.19-64, 4.19-67, 4.19-68, 4.19-71, 4.19-72, 4.19-73, 4.20-45, 4.20-46, 4.20-47, 4.20-52, 4.20-53, 4.20-55, 4.21-42, 4.21-43, 4.21-44, 4.21-45, 4.21-46, 4.21-51, 4.21-53, 4.21-54, 4.21-56, 4.22-10, 4.22-11, 4.22-12, 4.22-17, 4.23-3, 4.23-5, 4.23-6, 4.23-10, 4.23-11, 4.23-17, 4.23-18, 4.23-19, 4.23-20, 4.23-25, 4.23-26, 4.23-27, 4.23-28, 4.23-59, 4.23-60, 4.23-61, 4.23-62, 4.23-63, 4.23-64, 4.23-66, 4.23-79, 4.23-80, 4.23-82, 4.23-84, 4.23-85, 4.23-86, 4.23-884.24-3, 4.24-11
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